ACC NR: AP7001582 SOURCE CODE: UR/0421/66/000/006/0129/0134

AUTHOR: Panov, Yu. A. (Moscow); Shvets, A. I. (Moscow); Khazen, A. M. (Moscow)

ORG: none

TITLE: Investigation of base pressure fluctuations behind a cone in supersonic flow

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 6, 1966, 129-134

TOPIC TAGS: supersonic aerodynamics, supersonic flow, base pressure, pressure gage, pressure measurement, pressure transducer, wake flow

ABSTRACT: A detailed description is presented of a highly accurate experimental investigation of the base pressure fluctuations behind a cone of semi apex angle of 10° with aft section diameters d = 100, 130 and 150 mm in supersonic flow of M = 3. A specially designed pressure sensor was used for measuring base pressure fluctuations which uses the dependence of corona discharge parameters in a gas upon pressure. Its construction, operation and calibration are described in detail. The level of noise background of the experimental tube was measured in order to compare it with output signal of the pressure sensor, and the oscillations of the model were recorded by N-102 oscillograph with the aid of two strain gages fastened on model supports. Oscillographic recording of the base pressure fluctuation spectra are presented for the model with base of 150 mm in diameter at pressure of 5 atm, and show that the amplitude of fluctuations and frequency range increase with cone diameter. The same

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239110005-9"

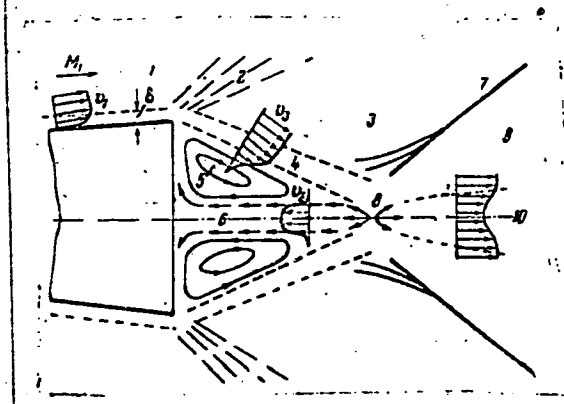

Fig. 1. Flow configuration

1 - Outer flow; 2 - Prandtl-Mayer flow region; 3 - outer flow in the base region; 4 - boundary stagnation zone; 5 - toroidal vortex; 6 - axisymetric flow; 7 - tail shocks; 8 - stagnation point in the wake throat; 9 - outer flow behind tail shocks; 10 - turbulent wake.

pattern can be observed with increasing pressure in the mixing region. The amplitude maxima are obtained at frequencies higher than 100C, that is, they do not coincide with oscillation frequencies of the model (40—50 c). In order to throw more light on the behaviour of the flow in the base region, the flow structure behind the cone base was investigated with the aid of plates coated with a luminescent paint. The presence of an axisymmetric reverse flow coming from the wake throat to the cone base and a toroidal vortex flow occupying the region between reverse flow and dividing

ACC NR: AP7001582

streamline (see Fig. 1) is discussed. The causes of high and low-frequency fluctuations of base pressure are analyzed and tentatively explained. Assumption is made that the total head in the reverse flow is proportional to the dynamic head of the outer flow in region 3 which ejects the gas from the stagnation region. The dynamic head in this region, in turn, is directly proprotional to the pressure head of the free flow. Consequently the total energy and maximum amplitude of base pressure fluctuations should be proportional to the dynamic head of the free flow. It is said in the conclusion that the spectrum of the base pressure fluctuations represents a very complex superposition of a series of harmonic fluctuations. Orig. art. has: 7 figures. [AB]

SUB CODE: 20/ SUBM DATE: 26Jul66/ ORIG REF: 004/ OTH REF: 007/
ATD PRESS: 5110

Card 3/3

GURVICH, I.P., kand. tekhn. nauk; [illegible], Yu.I.; [illegible], [illegible].

Some aspects of the high-speed gear testing of engines. Vest. prom. 31 no.2:5-6 F '51. (MLRA 10:4)

1. Gor'kovskiy avtomobil'nyy zavod i Gor'kovskiy sel'skokhozyaystvennyy institut.

PANOV, Yu.N.; NORDBEK, K.Ya.; FRENKEL', S.Ya.

Selective interaction in polymer chains. Part 3: Fluctuational amorphous network in solution of polymers capable of interchain hydrogen bonding. Vysokom. soed. 6 no.1:47-51 Ja'64. (MIRA 17:5)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.

DIDENKO, A.N.; PANOV, Yu.A.

Computation of shunt impedance and quality estimation of two-terminal time-delay ladders. Izv.vys.ucheb.zav.;radiofiz. 5 no.1:187-190 '62. (MIRA 15:5)

1. Tomskiy politekhnicheskiy institut elektroniki i avtomatiki pri Tomskom universitete.
(Electric networks) (Wave guides)
(Impedance (Electricity))

PANOV, Yu. D., Engineer,

"Measurement of the Momentary Force Acting on a Blade of a Bladed Propelling Device."

Papers presented at the Tenth Scientific-Technical Conference on Ship Theory (Sudostroyeniye, No 4, 1960)

PANOV, Yu.I., inzh.

Terraces of the Kuban River. Trudy Gidroproekta 3:242-250 '60.
(MIRA 13:7)

1. Stalingradskiy filial Vsesoyuznogo proyektno-izyskatel'skogo i nauchno-issledovatel'skogo instituta "Gidroproyekt" imeni S.Ya. Zhuka.
(Kuban Valley--Erosion)

AL'BOV, M.N., prof.; PANOV, Yu.K., inzh.

Correlated dependence of the components in an iron ore deposit. Izv. vys. ucheb. zav.; gor. zhur. 6 no.7:11-18 '63. (MIRA 16:9)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy poiskov i razvedki mestorozhdeniy poleznykh iskopayemykh Sverdlovskogo gornogo instituta.
(Iron ores)

PANOV, Yu.L., inzh.

Measuring the instantaneous force acting on wing-shaped propeller blade. Sudostroenie 26 no.2:5-7 (208) Feb '60. (MIRA 14:11)

(Propellers)

PANOV, Yu.L., inzh.

Theoretical and experimental study of the movements of a feathering propeller. Trudy GPI 19 no.2:60-76 '63. (MIRA 17:10)

SOV/124-57-8-8688

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 8, p 15 (USSR)

AUTHOR: Panov, Yu. L.

TITLE: Oscillograph Determination of a Dynamic Unbalance (Opredeleniye dinamicheskoy neuravnoveshennosti pri pomoshchi ostsillografa)

PERIODICAL: Tr. Gor'kovsk. politekhn. in-ta, 1956, Vol 12, Nr 3, pp 22-24

ABSTRACT: Bibliographic entry

Card 1/1

L 23328-65 EWT(m)/EWP(w)/EWP(v)/EWP(k) Pf-4 EM
ACCESSION NR: AR4040327 S/0124/64/000/004/B044/B044

SOURCE: Ref. zh. Mekhanika, Abs. 4B248

AUTHOR: Panov, Yu. L.

TITLE: A theoretical and experimental study of the motion of a rotor engine blade

CITED SOURCE: Tr. Gor'kovsk. politekhn. in-ta, v. 19, no. 2, 1963, 60-76

TOPIC TAGS: rotor engine, rotor blade, blade motion analysis, single blade system, multiple blade system, velocity field, bound vortex circulation, hydrodynamic force

TRANSLATION: The solved problem concerns unsteady motion of a single rotor. The latter consists of a thin plate of finite width and infinite length. The motion of its center follows an elongated trochoid trajectory. The rotor performs a periodic, non harmonic, rotary oscillating motion in relation to its center. The bearing vortex layer on the rotor is simulated by two bound vortices. The author defines the field of velocities induced by the entire vortex system. A system of integro-differential equations, defining the circulation of bound vortices, is solved here by expansion in power series. Effects of accuracy of the expansion operations are evaluated. Zhukovskiy's theorem is generalized

for the case of unsteady motion and the dynamic effect of a fluid on the rotor is determined

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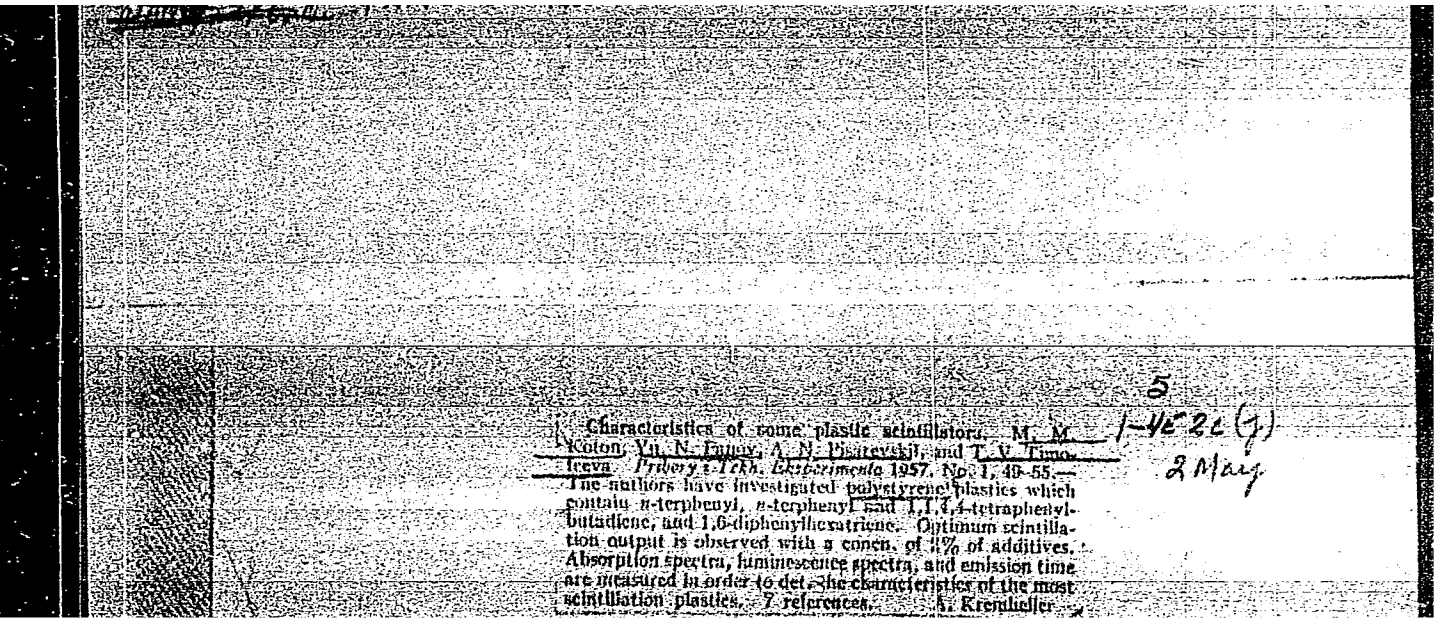
L 23328-65
ACCESSION NR: AR4040327

on that basis. Hydrodynamic forces acting on a single rotor were also determined in stand tests. Author notes the adequate coincidence of experimental data and results obtained by theoretical calculation. The problem on motion of an isolated rotor is expanded in the second part of the study to cover an arbitrary number of blades. Results of the study can serve as a basis in evolving a practical method for calculating rotor engines. Bibl. with 8 titles. A. M. Volodko.

SUB CODE: PR ENCL: 00



5
1-42 22 (7)
2 May

Characteristics of some plastic scintillators. M. M. Kotov, Yu. N. Ivanov, A. N. Diatcvskii, and T. V. Timofeeva. *Pribory i Tekh. Eksperimenta* 1957, No. 1, 49–55.—The authors have investigated polystyrene plastics which contain *n*-terphenyl, *a*-terphenyl and 1,1,4,4-tetraphenylbutadiene, and 1,6-diphenylhexatriene. Optimum scintillation output is observed with a concn. of 1% of additives. Absorption spectra, luminescence spectra, and emission time are measured in order to det. the characteristics of the most scintillation plastics. 7 references. A. Krendlisler

PANOV, Yu.N.

120-3-11/40

AUTHORS: Adrova, N.A., Koton, M.M., Panov, Yu.N., Florinskiy, F.S.

TITLE: Effective Plastic Scintillators for Recording of Radioactive Emissions (Effektivnyye stsintillyatsionnyye plastmassy dlya registratsii radioaktivnykh izlucheniy)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, Nr 3, pp.43-47 (USSR)

ABSTRACT: Various plastics have been investigated as possible scintillators. It has been shown experimentally that the following plastic scintillators based on polystyrene are efficient:

1. 2% terphenyl + 0.1 quarterphenyl.
2. 1% 2,5-diphenyloxazole.
3. 1-2% 1,1,4,4-tetraphenylbutadiene.
4. 2% terphenyl + 0.02 to 0.03% 1,1,4,4, tetraphenylbutadiene.
5. 2.5% 9,10-diphenylanthracene.
6. 2% terphenyl + 0.02 to 0.03% 1,4- 2-(5-phenyl-oxazolyl)-benzene.
7. 1% 2,5-diphenyloxazole + 0.02 to 0.03% 1,4-di-2-(5-phenyloxazolyl)-benzene.

Card 1/2 The technique of preparation of plastic scintillators based

Effective Plastic Scintillators for Recording of Radioactive Emission.

on styrene has been worked out. Specimens can be obtained with diameters between 3 and 15 cm. There are 1 figure, 2 tables and 27 references, of which 3 are Russian, 21 are English and 3 are Dutch.

ASSOCIATION: Institute of High Molecular Compounds of the Academy of Sciences of the USSR (Institut vysoko-molekulyarnykh soyedineniy AN SSSR)

SUBMITTED: December 6, 1956.

AVAILABLE: Library of Congress.

Card 2/2

1. Radioactive emissions-Recording devices 2. Plastic scintillators 3. Plastics-Determination

Panov, Yu. N.

B-4

USSR/Physical Chemistry - Molecule, Chemical Bond.

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3511.

Author : N.A. Adrova, M.M. Koton, Yu. N. Panov, F.S. Florinskiy.
Inst : Academy of Sciences of USSR.
Title : Connection Between Chemical Structure of Carbo- and Heterocyclic Compounds and Their Scintillating Activity.

Orig Pub: Dokl. AN SSSR, 1957, 114, No 2, 311-313.

Abstract: The scintillating activity (SA) of anthracene and polyphenyl derivatives, aryl derivatives of dienes and a series of heterocyclic compounds (60 compounds in total) introduced into polystyrene mass was studied. The compounds under study were introduced into the styrene monomer in amounts answering their maximum efficiency (1 to 2% by weight) and polymerized in presence of 0.2% of benzoil peroxied at a gradual temperature rise from 80 to 120° in the duration of 4 to 5 days. The following compounds possess the greatest SA in the plastic: 1,4-di-

-7-

Card : 1/2

PANOV, Yu. N.

AUTHORS: Adrova, N. A., Keton, M. M., Panov, Yu. N. 48-1-9/20
Florinskiy, F. S.

TITLE: Efficacy of the Scintillation of Carbo- and Heterocyclic Compounds in Plastics (Stsintillyatsionnaya effektivnost' karbo- i geterotsiklicheskikh soyedineniy v plastmassakh).

PERIODICAL: Izvestiya AN SSSR Seriya Fizicheskaya, 1958, Vol. 22, Nr 1, pp. 41-43 (USSR).
Received: March 8, 1958

ABSTRACT: The efficacy of the scintillation of substituted anthracenes, polyphenyls, aryl-derivatives of dienes and an number of heterocyclic compounds (oxyzolen, oxydiazolen etc.) on their introduction into a polystyrene-plastic was investigated here. The above-mentioned substances were introduced into the styrene-monomer in quantites corresponding to their maximum efficacy (1-2%) and were polymerized with 0,2% benzoylperoxide at a gradual rise of temperature from 80 to 120°C during 4-5 days until the formation of transparent firm blocks which were then shaped into cylinders. From the obtained data it was possible to determine a connection between the chemical structure of the organic substances and the efficacy of their scintillation. The following com.ounds

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possess the highest efficacy in plastics: 1,4-di-[2-(5--phenyloxazolyl)] benzene (I) which is designated as POPOP, quaterphenyl (II), and 9-10-diphenylanthracene (III), i.e. compounds with 4-5 cycles in the molecule and conjugate double bonds. In the series of oxazoles (IV) and oxydiazoles (V) with the same substituents (e.g. phenyl-groups) the oxazole-derivatives have a higher scintillation-activity than the oxydiazole-derivatives. 1,1', 4,4'-tetraarylbutadiene (VI), where R = H, CH_3 and p-terphenyl (VII) also possess a sufficiently high scintillation-activity. Other compounds with 3 cycles in the molecule (anthracene, phenanthrene, acenaphthene, dibenzofuran, dibenzothiophene and others) do not show a high scintillation-efficacy in plastics. Stilbene and tolane which in monocrystal-form possess a high scintillation-efficacy are ineffective on introduction into plastics. 1,4-diphenylbutadiene is little effective in plastics, although it possess sufficient effectiveness in solutions. For increasing the scintillation-efficacy of plastics it is expedient to introduce two organic scintillators simultaneously into polystyrene. One of those, the cheaper and easier one to obtain (terphenyl, diphenyloxazole) plays the part of

Efficacy of the Scintillation of Carbo- and Heterocyclic Compounds in Plastics. 48-1-9/20

a coactivator (quaterphenyl, POPOP) and is introduced in small quantities but at the same time it considerably increases the total scintillation-efficacy of the plastic. On the basis of the obtained experimental data the authors produced effective scintillation-plastics on a styrene-base of a diameter of from 30 to 150 mm and of a weight up to 3 kg. The effectiveness varies from an order of magnitude of 85% in the stilbene-crystals to 50% in the anthracene-crystal.
There are 1 table and 4 references, 2 of which are Slavic.

ASSOCIATION: Institute for High-Molecular Compounds AN USSR (Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR).

AVAILABLE: Library of Congress

1. Plastics 2. Cyclic compounds 3. Polymerization

Card 3/3

24(4), 5(3)

AUTHORS: Panov, Yu.N., Adrova, N.A. and Koton, M.M.

SOV/51-7-1-5/27

TITLE: Optical Properties of Compounds of the Oxazole, Oxydiazole and Furan Series (Opticheskiye kharakteristiki soyedineniy ryadov oksazola, oksidiazola i furana)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 1, pp 29-34 (USSR)

ABSTRACT: The paper was presented at the Second Conference for Coordination of Work on Application and Preparation of Scintillators, which was held in Khar'kov in November, 1957. To find the relationship between the chemical structure and scintillation properties of organic compounds the authors studied optical properties of benzene solutions of 2,5-diaryl derivatives of oxazoles, oxydiazoles and furan. For this purpose the following compounds were synthesized and studied:

2,5-diphenyl-1,3-oxazole (PPO);
2-α-naphthyl-5-phenyl-1,3-oxazole (NPO);
2-β-styryl-5-phenyl-1,3-oxazole (SPO);
2-phenyl-5-(4-biphenyl)-1,3-oxazole (PBO);
2-α-furyl-5-phenyl-1,3-oxazole (FPO);

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Optical Properties of Compounds of the Oxazole, Oxydiazole and Furan Series

1,4-di-[2-(5-phenyloxazolyl)] benzene (POPOP);
2,5-diphenyloxydiazole (PPD);
2-α-styryl-5-phenyl-1,3,4-oxydiazole (SPD);
2-α-furyl-5-phenyl-1,3,4-oxydiazole (FPD);
1,4-di-[2-(5-phenyloxydiazolyl)] benzene (PDPDP);
2,5-diphenylfuran (PPF);
3-acetyl-2,5-diphenylfuran;
n-terphenyl;
anthracene;

(the data on anthracene and terphenyl are given for the sake of comparison). The authors obtained absorption and luminescence spectra, luminescence quantum yields and scintillation light yields of all the compounds listed above. The absorption spectra were recorded by means of a spectrophotometer SF-4. The luminescence spectra were obtained by means of an assembly in which a spectrophotometer SF-11 was used as the monochromator. The absorption and luminescence spectra were corrected for the spectral sensitivity of the apparatus used to record them and for re-absorption. The luminescence quantum yields were found by comparing the energy radiated by a given substance and that by a solution of anthracene in benzene (1 mg/cm^3) under the conditions of

Optical Properties of Compounds of the Oxazole, Oxydiazole and Furan Series

total absorption of the excitation energy. The quantum yields of all the compounds were extrapolated approximately to the conditions of infinite dilution. The scintillation light yields (i.e. the maximum scintillation amplitudes) were determined by the method described earlier by Adrova et al. (Ref 6). The absorption and luminescence maxima, the quantum and light yields are listed for some of the oxazoles in Table 1 (this table includes also data on terphenyl and anthracene). The same properties of several oxydiazoles are listed in Table 2. The absorption and luminescence spectra of some oxazoles and oxydiazoles are shown in Figs 1-4. It was found that in the oxazole and oxydiazole series the luminescence quantum yield decreased and the absorption and luminescence spectra were displaced towards longer wavelengths on decrease of the number of hetero-atoms of nitrogen (Tables 3 and 4). In each series the spectra were displaced towards longer wavelengths and

Optical Properties of Compounds of the Oxazole, Oxydiazole and Furan Series

the luminescence quantum yield fell on transition from phenyl to styryl radicals. Acknowledgment is made to Ye.V. Anufriyeva for her help in this work. There are 4 figures, 4 tables and 6 references, 4 of which are Soviet and 2 English.

SUBMITTED: August 2, 1958

L 11351-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP4047223 S/0190/64/006/010/1917/1917

AUTHOR: Frenkel', S. Ya.; Baranov, V. G.; Bel'nikevich, N. G.; Panov, Yu. N.

TITLE: Orientation mechanism of solid-phase formation in polymer solutions subjected to a longitudinal hydrodynamic field

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 6, no. 10, 1964, 1917

TOPIC TAGS: solid phase formation, polymer solution, elongation, fiber formation, polymethyl methacrylate, fibroin

ABSTRACT: A new mechanism of solid phase formation in a liquid polymer-solution thread during orientation has been discovered. Liquid threads of 15% fibroin solution in water or 3% poly(methyl methacrylate solution in dimethylformamide were stretched. In all cases, irreversible solvent dis-

suggested that the new [illegible]
formation process of natural silk and cobwebs. [illegible]

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L 11351-65
ACCESSION NR: AP4047223

significance in gaining an understanding of the formation process of oriented polymer systems from solutions. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 22Jun64 ATD PRESS: 3118 ENCL: 00

SUB CODE: GC NO REF SOV: 002 OTHER: 002

Card 2/2

ZAYTSEVA, A.D.; PANOV, Yu.N.

Measurements of the light sums of plastic scintillators. Prib. i tekh. eksp. 6 no.1:64-67 Ja-F '61. (MIRA 14:9)

1. Institut vysokomolekulyarnykh soyedineniy AN SSSR.
(Scintillation counters)

S/120/61/000/001/019/062
E032/E114

AUTHORS: Zaytseva, A.D., and Panov, Yu.N.

TITLE: On the Measurement of the Light Yields of Plastic Scintillators

PERIODICAL: Pribory i tekhnika eksperimenta 1961, No.1, pp.64-67

TEXT: Plastic scintillators are being widely used at the present time. Measurements of the relative light yields published by different authors occasionally disagree (L.L. Nagornaya and A.P. Kilimov, Ref.1). I.M. Rozman and S.F. Kilin (Ref.2) have pointed out that the relative light yields depend on the dimensions of the compared specimens. The present authors have carried out additional calculations concerned with the determination of the relative light yield due to γ and β radiations. It is assumed that in the case of β-rays all the β-energy is absorbed in an infinitely thin layer of the scintillator. If one neglects various secondary effects then the intensity of the scintillations reaching the photomultiplier cathode can be written down in the form

$$I_\beta = I_{0\beta} e^{-\mu \ell} \qquad (1)$$

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On the Measurement of the Light Yields of Plastic Scintillators

where $I_{0\beta}$ is the intensity due to an infinitely thin layer and μ is the reabsorption coefficient of the given scintillator. In the case of γ-rays it is assumed that the excitation occurs uniformly over the entire volume of the scintillator in which case the intensity reaching the photocathode is given by

$$I_\gamma = \int_0^{\ell} I_{0\gamma} e^{-\mu x} dx = (1 - e^{-\mu \ell}) / \mu \qquad (2)$$

The difference in the relative light yields due to γ and β rays is then given by

$$k_\beta - k_\gamma = e^{(\mu_1 - \mu_2)\ell} \qquad (3)$$

It is apparent from these results that the relative intensities due to β and γ rays are not in general equal, and are functions of the difference between reabsorption coefficients and the thicknesses of the compared specimens. M. Furst and H. Kallman (Ref.8) have given the following formula for the dependence

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On the Measurement of the Light Yields of Plastic Scintillators

of the light yield on concentration:

$$L = pC/(Q + C)(R + C) \quad (4)$$

where p, Q and R depend on the nature of the solvent and solute, as well as on the nature of the ionizing radiation. The optimum concentration can be found by determining the maximum of L(C). The result is:

$$C_{opt} = \sqrt{QR} \quad (5)$$

One of the reasons for the existence of an optimum concentration is the increase in the reabsorption with concentration. Since at constant μ reabsorption depends on ℓ, it follows that Q and R will also depend on ℓ. In the experimental verification of the above results the present authors used various polystyrene based scintillators and measured the reabsorption coefficient μ. This was done by irradiating the scintillators with β-particles from Sr^{90} and measuring the photomultiplier current as a function of the length of the scintillators. Similar measurements were

S/120/61/000/001/019/062
E032/E114

On the Measurement of the Light Yields of Plastic Scintillators

carried out with the γ-rays of Co^{60} using the methods described by M.M. Koton et al. (Ref.9). It is concluded from these measurements that the difference in the relative light yields of plastic scintillators irradiated by different sources is due to differences in the reabsorption coefficients of different specimens. In describing the characteristics of scintillators it is essential to state the values of the reabsorption coefficients and the dimensions of the specimens. This is particularly important for scintillators with two organic activators, owing to the considerable difference in the reabsorption coefficient as compared with the case of a single activator There are 3 figures and 10 references: 7 Soviet and 3 non-Soviet.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High Molecular Compounds, AS USSR)

SUBMITTED: January 20, 1960

Card 4/4

PANOV, Yu. N.

PHASE I BOOK EXPLOITATION SOV/1297

Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izlucheniy v narodnom khozyaystve i nauke, Moscow, 1957

Primeneniye izotopov. Nauchnyye osnovy. Radiometriya i dozimetriya; trudy konferentsii... (Isotope Production. High-energy Gamma-Radiation Facilities. Radiometry and Dosimetry; Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science) Moscow, Izd-vo AN SSSR, 1958. 293 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR; Otdeleniye upravleniya po ispol'zovaniyu atomnoy energii SSSR.

Editorial Board: Prolov, Yu.S. (Resp. Ed.), Zhavoronkov, N.M. (Deputy Resp. Ed.), Aglintsev, K.K., Aleksayev, B.A., Bochkarev, V.V., Zabezhinskiy, M.I., Malkov, T.P., Sinitsyn, V.I., and Popova, O.L. (Secretary); Tech. Ed.: Novichkov, N.D.

PURPOSE: This collection is published for scientists, technologists, persons engaged in medicine or medical research, and others concerned with the production and/or use of radioactive and stable isotopes and radiation.

COVERAGE: Thirty-eight reports are included in this collection under three main subject divisions: 1) production of isotopes 2) high-energy gamma-radiation facilities, and 3) radiometry and dosimetry.

TABLE OF CONTENTS:

Card 9/12

Panov, Yu. N.

20-2-21/60

AUTHORS: Adrova, N. A., Koton, M. M., Panov, Yu. N., Florinskiy, F. S.

TITLE: The Scintillation Activity of Carbocyclic and Heterocyclic Compounds as Related to Their Chemical Structure (O svyazi mezhdu khimicheskim stroyeniyem karbo- i geterotsiklicheskikh soyedineniy i ikh stsintillyatsionnoy aktivnost'yu)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp.311-313 (USSR)

ABSTRACT: The paper under review investigates the relationship between the chemical structure of the carbocyclic and heterocyclic compounds and their scintillating activity.
In addition to the known inorganic 'phosphors', also the organic 'phosphors' are at present being widely used as crystalline, liquid, or synthetic scintillators. Among the organic compounds, fluorescence will be found in the majority of the aromatic hydrocarbons and also in a considerable number of heterocyclic compounds, the molecules of which contain ring-shaped structures and conjugated double bonds.

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The Scintillation Activity of Carbocyclic and Heterocyclic Compounds as Related to Their Chemical Structure

An investigation of the relationship between their structure and their scintillating activity can be of help in the construction of scintillators with highest luminescent properties. The authors of the paper under review conducted the investigation of the above-mentioned activity of the substituted anthracenes, polyphenyls, aryl derivatives of the dienes and of a sequence (60) of heterocyclic compounds by introducing them into the polystyrol plastic. They were introduced into styrol monomer in quantities corresponding to their highest effectiveness. In presence of 0,2 % benzoyl peroxide and under gradually increasing temperature (80 to 120 degrees centigrade) they were polymerized until transparent cylindrical hard blocks were obtained. These blocks were examined with respect to their scintillating effectiveness by means of a device that permitted to establish the relative amplitude value by the output of the photoelectronic multiplier. The results obtained suggest a dependence between the chemical structure of the blocks and their scintillating effectiveness. It may be concluded from Chart Nr 1, contained in the paper under review, that the 1,4-di-(2-(5-phenyloxazolyl)-benzene, the quaterphenyl and the 9,10-diphenylanthracene, i.e. hydro-

The Scintillation Activity of Carbocyclic and Heterocyclic Compounds as Related to Their Chemical Structure

carbons with 4-5 cycles in the molecule and with conjugated double bonds, have the highest activity. In the series of the oxazoles and of the oxadiazoles, which have high values of scintillating activity, the latter depends to a considerable degree on the nature of the substituents in the position 2,5. If the substituents are the same (phenyl), then the oxazole derivatives (IV) are of a higher activity than the oxadiazoles (V). Also the 1,1,4,4-tetraarylbutadienes (VI) and P--terphenyl (VII) are of a high activity. The above interrelationship exists also for the hydrocarbons with three condensed nuclei which differ from each other by the structure of their rings, their number of conjugations, and the existence of different heterocycles (O, S, NH). Anthracene is more effective than phenanthracene and azenaphthene. In the series of the dibenzyl derivatives of furan, thiophene and pyrrole, the oxygen-containing heterocycle XI has the highest activity. Different diarylmethanes are of lower activity, also in their crystallized state, in the molecule of which the conjugation between the benzene rings is interrupted. Only if the number

The Scintillation Activity of Carbocyclic and Heterocyclic Compounds as Related to Their Chemical Structure

of cycles is increased to 4, the activity rises from 9 % to 31 %. If substituents are introduced into the benzene ring, then both the chemical nature and also the isomerism affect the scintillating activity; this was observed by the authors of the paper under review in 9-substituted anthracene. Here this activity also increases at the transition from the methyl radical to the butyl radical. The paper under review gives diagrams of the chemical structure for all compounds mentioned. There are 4 references, 2 of which a.

ASSOCIATION: Institut for High Molecular Compounds, AS USSR
(Insitut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR)

PRESENTED: December 12, 1956, by A. N. Terenin, Academician

SUBMITTED: November 8, 1956

AVAILABLE: Library of Congress

ACC NR: AT7003806 SOURCE CODE: UR/0000/63/000/000/0155/0165

AUTHOR: Panov, Yu. O.; Shvets', O. I.

ORG: none

TITLE: Research on the wake structure behind a body at supersonic speeds

SOURCE: Kiyev, Universytet. Zbirnyk naukovych prats' aspirantiv; fizyko-matematychni nauky (Graduate student papers; physical and mathematical sciences). Kiev, Vyd-vo Kyyvs'koho univ., 1963, 155-165

TOPIC TAGS: supersonic flow, hypersonic flow, boundary layer flow, flow analysis, flow velocity, flow research

ABSTRACT: A state-of-the-art report and critique of base flow and base pressure research in the wake at supersonic speeds is given. Classical and modern experiments (Crocco-Lees, Chapman, Bogdanov, Charwat, et al) are tabulated, and hypotheses are analyzed. The discrepancies, inconsistencies and contradictions contained in various theories are pointed out. The problem of base pressure is closely related to the dynamics of the flow boundary of the wake behind the body, and to the effects of the boundary layer which is separated from the trailing edge upon the mixing process. The overall state-of-the-art indicates that the laws of base flow are not sufficiently researched, and not enough experimental data is available to verify, or disprove, some

Card 1/2

ACC NR: AT7003806

of the available hypotheses. The following are some of the areas that require additional investigation: 1) Distribution of the velocities, pressures and temperatures in the reflux; 2) Structure of the flow boundary in the wake for a plane and three--dimensional case, for both laminar and turbulent mixing; 3) The effect of the geometric characteristics of the body upon the base flow; 4) Mass and heat exchange phenomena; 5) Heat exchange at the base at various conditions of circumfluence; 6) Turbulent mixing coefficient in supersonic flows in general, and in non-isothermic and non-isobaric flows in particular. Orig. art. has: 12 figures.

SUB CODE: 20/ SUBM DATE: 30Jan64/ ORIG REF: 008/ OTH REF: 002

Card 2/2

ACC NR: AT7003807 SOURCE CODE: UR/0000/63/000/000/0166/0179

AUTHOR: Panov, Yu. O.; Shvets', O. I.

ORG: none

TITLE: An analysis of base pressure theories

SOURCE: Kiyev. Universytet. Zbirnyk naukovych prats' aspirantiv; fizyko-matematychni nauky (Graduate student papers; physical and mathematical sciences). Kiev, Vyd-vo Kyyvs'koho univ., 1963, 166-179

TOPIC TAGS: supersonic flow, hypersonic flow, near sonic flow, boundary layer flow, Reynolds number, flow analysis, flow research, flow temperature measurement, flow velocity

ABSTRACT: A state-of-the-art report, and a critical review is given of the classical and modern base pressure theories, the validity of some of the assumptions, experimental data, and calculation methods. Crocco-Lees' and Chapman-Korst's methods and assumptions for supersonic separated and reattaching flows appear to be essentially correct, and are in reasonable agreement with the experimental data obtained from ballistic rockets. While the Chapman-Korst theory is simpler and yields a satisfactory quantitative agreement for certain practical applications of supersonic flow, it contains a number of inaccuracies and assumptions that have as yet to be validated. Some

Card 1/2

L 45082-65 EWT(1)/EWP(e)/EWA(d)/EPR/FCS(k)/EWA(1) Pd-1 WW

ACCESSION NR: AR5008947 8/0124/65/000/002/B035/B036

22
B

SOURCE: Ref. zh. Mekhanika, Abs. 2B199

AUTHOR: Panov, Yu. O.; Shvets', O. I.

TITLE: Analysis of the flow behind a body at supersonic flight velocities

CITED SOURCE: Zb. nauk. prats' aspirantiv Kyyivs'k. un-t. Fiz.-matem. n., Kyyiv, 1963, 155-165

TOPIC TAGS: wind tunnel test, supersonic flight, flow structure analysis, base pressure region

TRANSLATION: Experimental studies carried out by various foreign authors to determine base pressure at supersonic flight velocities are subjected to analysis. The experimentally defined dependence of base pressure on the ratio of mounting base diameter d to model diameter D, plotted for Mach 1.5 to 7.6, serves as a basis for the conclusion that the mounting base does not affect base pressure at $d/D \leq 0.3$. The authors illustrate the dependence of base pressure on M and r, as well as the angle of taper of the model's trailing edge. It follows from the graphic dependence of the base pressure factor p_g on the M number, plotted for M = 1 to 8, that the experimental data can be

L 45002-65

ACCESSION NR: AR5008947

range M = 2 to 8 by employing the function $p_s = 0.7/M^2$. Base pressure increases for a streamline boundary later as the R number rises. It falls sharply when the streamline layer becomes turbulent. Its value is constant for a turbulent boundary layer. An analysis is made of studies related to the structure of a flow in the base pressure region. The authors also describe techniques of visual representation of the flow and give velocity curves for various distances from the base region. In conclusion, the authors pose ten problems related to studies of phenomena in the base region. Bibl. with 30 titles. Abstractor's Note: The article contains inconsistencies between numerical data presented in the text and in the diagrams (figs. 4 and 5). A. F. Kryuchin

SUB CODE: ME,AC ENCL: 00

Card 2/2

L 45082-65 EWT(1)/EWP(k)/EWA(d)/EPR/FCS(k)/EWA(1) Pd-1 WW

ACCESSION NR: AR5008947 S/0124/65/000/002/B035/B036

22
B

SOURCE: Ref. zh. Mekhanika, Abs. 2B199

AUTHOR: Panov, Yu. O.; Shvets', O. I.

TITLE: Analysis of the flow behind a body at supersonic flight velocities

CITED SOURCE: Zb. nauk. prats' aspirantiv Kyyivs'k. un-t. Fiz.-matem. n., Kyyiv, 1963, 155-165

TOPIC TAGS: wind tunnel test, supersonic flight, flow structure analysis, base pressure region

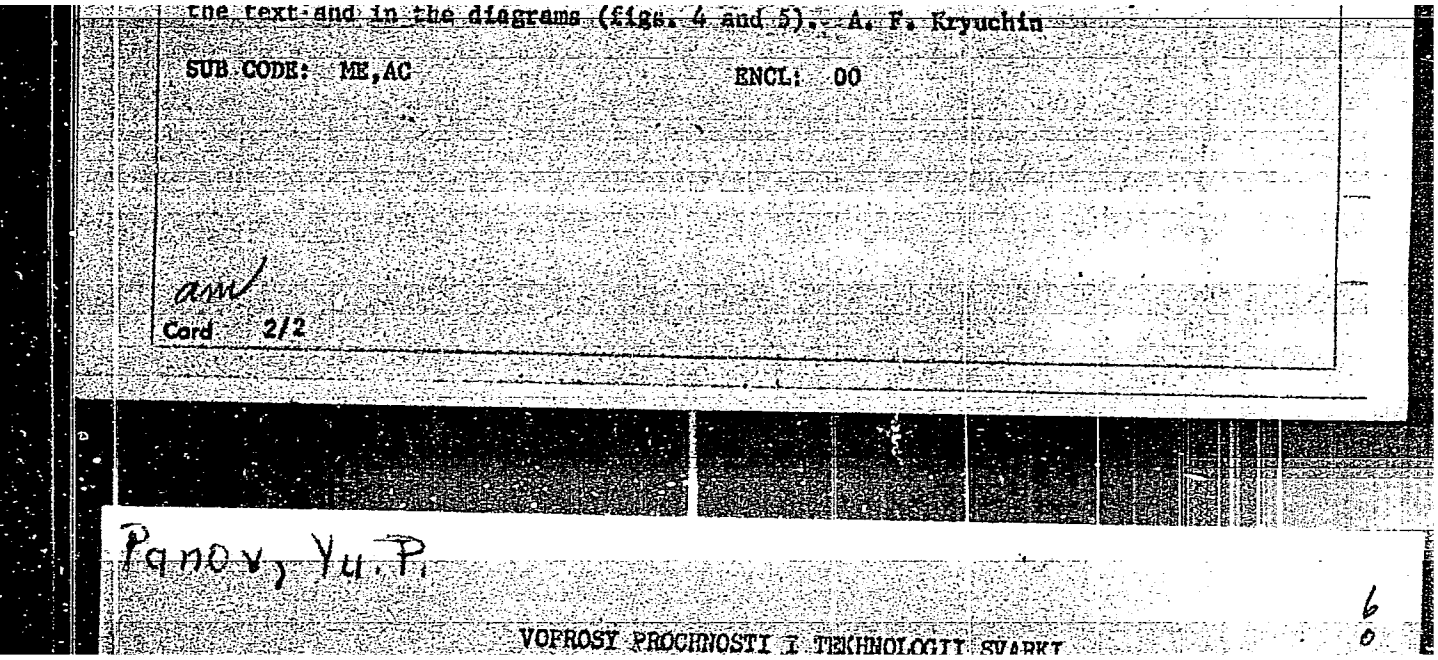
TRANSLATION: Experimental studies carried out by various foreign authors to determine base pressure at supersonic flight velocities are subjected to analysis. The experimentally defined dependence of base pressure on the ratio of mounting base diameter d to model diameter D, plotted for Mach 1.5 to 7.6, serves as a basis for the conclusion that the mounting base does not affect base pressure at $d/D \leq 0.3$. The authors illustrate the dependence of

Card 1/2 ... the experimental data can be interpolated satisfactorily for the

L 45092-65

ACCESSION NR: AR5008947

range M = 2 to 8 by employing the function $p_g = 0.7/M^2$. Base pressure increases for a streamline boundary later as the R number rises. It falls sharply when the streamline layer becomes turbulent. Its value is constant for a turbulent boundary layer. An analysis is made of studies related to the structure of a flow in the base pressure region. The authors also describe techniques of visual representation of the flow and give velocity curves for various distances from the base region. In conclusion, the authors pose ten problems related to studies of phenomena in the base region. Bibl. with 30 titles. Abstracter(s)



the text and in the diagrams (figs. 4 and 5). A. F. Kryuchin

SUB CODE: ME,AC ENCL: 00

asw

Card 2/2

Panov, Yu. P.

VOPROSY PROCHNOSTI I TEKHNOLOGII SVARKI

6
0

NAZAROV, S.T., kandidat tekhnicheskikh nauk; PANOV, Yu.P., inzhener.

Welding control by ultrasonics. [Trudy] MVTU no.37:240-254 '55.
(Ultrasonic waves--Industrial applications)(Welding--Testing)

PANOV, YU P.

137-58-2-3100

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 125 (USSR)

AUTHORS: Nazarov, S.T., Panov, Yu.P.

TITLE: Experience in Automatic Welding of Thin Steel Objects (Iz opyta avtomaticheskoy svarki izdeliy iz stali maloy tolshchiny)

PERIODICAL: V sb.: Prochnost' i avtomatizatsiya svarki (MVTU, 71). Moscow, 1957, pp 124-128

ABSTRACT: The techniques and equipment used in welding beams of complex shape, consisting of a number of formed elements of 1-2.5 mm 15KhF steel, is described. Automatic welding with Sb-1A wire, 2-3 mm in diameter, under FTs-6 flux was employed. The welding schedules are described in relation to the thickness of the metal being welded. An optimum sequence for making the welds to prevent distortion was found. High stability of the welding regime was attained by using an ADS-1000 welder of improved circuit design and a welding head with thyratron regulator, the circuit of which is adduced, in welding metal 1 mm thick. The source of current was an SUG-2r generator with a ballast rheostat connected in series.

Card 1/1

A L.

1. Steel—Welding 2. Welding—Equipment 3. Welds—Deformation

PANOV, Yu. P.

NAZAROV, S.T.; PANOV, Yu.P.

Method of ultrasonic control of welded seams. Zav. lab. 23 no.3:305-308 '57. (MLRA 10:6)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche im. Baumana.
(Ultrasonic tesing) (Welding--Testing)

AUTHORS: Nazarov, S. T., Panov, Yu. P. SOV/32-24-10-16/[illegible]

TITLE: Ultrasonic Control of the Quality of Contact, Point, and Seam Welding (Ul'trazvukovoy kontrol' kachestva kontaktnoy tochechnoy i shovnoy svarki)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1214 - 1217 (USSR)

ABSTRACT: The presently employed radioscopic, magnet-materiologic, and other physical methods for the control of welding are not perfect. S.T.Nazarov (Ref 2) had worked out a method for the control of the point of thermocoloring which makes the detection of the non-fusion possible. This method, however, takes much time and cannot be applied in the case of metals thicker than 5 mm. In the present paper a new method and apparatus for the ultrasonic control of point and seam weldings are described. On this occasion a modified device of the type [illegible], as well as a flaw detector of the type UZD-7N (TsNIITMASh) which is completed by a special pickup can be applied. The pickup shown in a figure is a prism of

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plexiglass to which two piezoelements are fixed. A schematic representation and a description show that the controls can be carried out in two ways. The second way requires a more careful assembly of the pickup and a more precise working technique. The accuracy of both sorts of controls is equal. An oscillogram obtained in the control of a welding-spot at a steel 3-4 mm thick is given in a figure. According to the results in practically all materials (steel, aluminum and its alloys, titanium, etc.) welding-spots can be controlled by means of the described method. There are 5 figures, 1 table, and 2 references which are Soviet.

ASSOCIATION: Moskovskoye vyssheye tekhnicheskoye uchilishche im. N.E.Baumana (Moscow Higher Technical School imeni N.E.Bauman)

Ultrasonic Control of the Quality of Contact, Point, and SOV/32-24-10-16/
Seam Welding

Card 3/3

NAZARENKO, O.K.; POVOD, A.G.; SHNYAKIN, N.S. (Moskva); ARTAMONOV, N.N. (Moskva); PANOV, Yu.P. (Moskva); KEDMAN, A.B. (Moskva)

Instruments and equipment for electron beam welding of large-size articles. Avtom. svar. 17 no.3:44-49 Mr '64. (MIRA 17:11)

1. Institut elektrosvarki im. Ye.O. Patona AN UkrSSR (for Nazarenko, Povod).

ACCESSION NR: AP4020103 S/0125/64/000/003/0044/0049

AUTHOR: Nazarenko, O. K. (Candidate of technical sciences); Povod, A. G. (Engineer); Shnyakin, N. S. (Engineer, Moscow); Artamonov, N. N. (Engineer, Moscow); Panov, Yu. P. (Engineer, Moscow); Kedman, A. B. (Engineer, Moscow)

TITLE: Equipment and techniques of electron-beam welding of large pieces

SOURCE: Avtomaticheskaya svarka, no. 3, 1964, 44-49

TOPIC TAGS: electron beam welding, welding, electron beam welding equipment, electron beam welding method, U86 electron beam welder, dagger shaped fusion

ABSTRACT: An experimental outfit for electron-beam (circular) welding of large-size pieces is described which can be mounted on a "telescopic" carriage with a headstock and tailstock and introduced into a cylindrical (4-m length, 2-m diameter) vacuum chamber; 20-mm-thick stainless steel was used for building

Card 1/2

ACCESSION NR: AP4020103

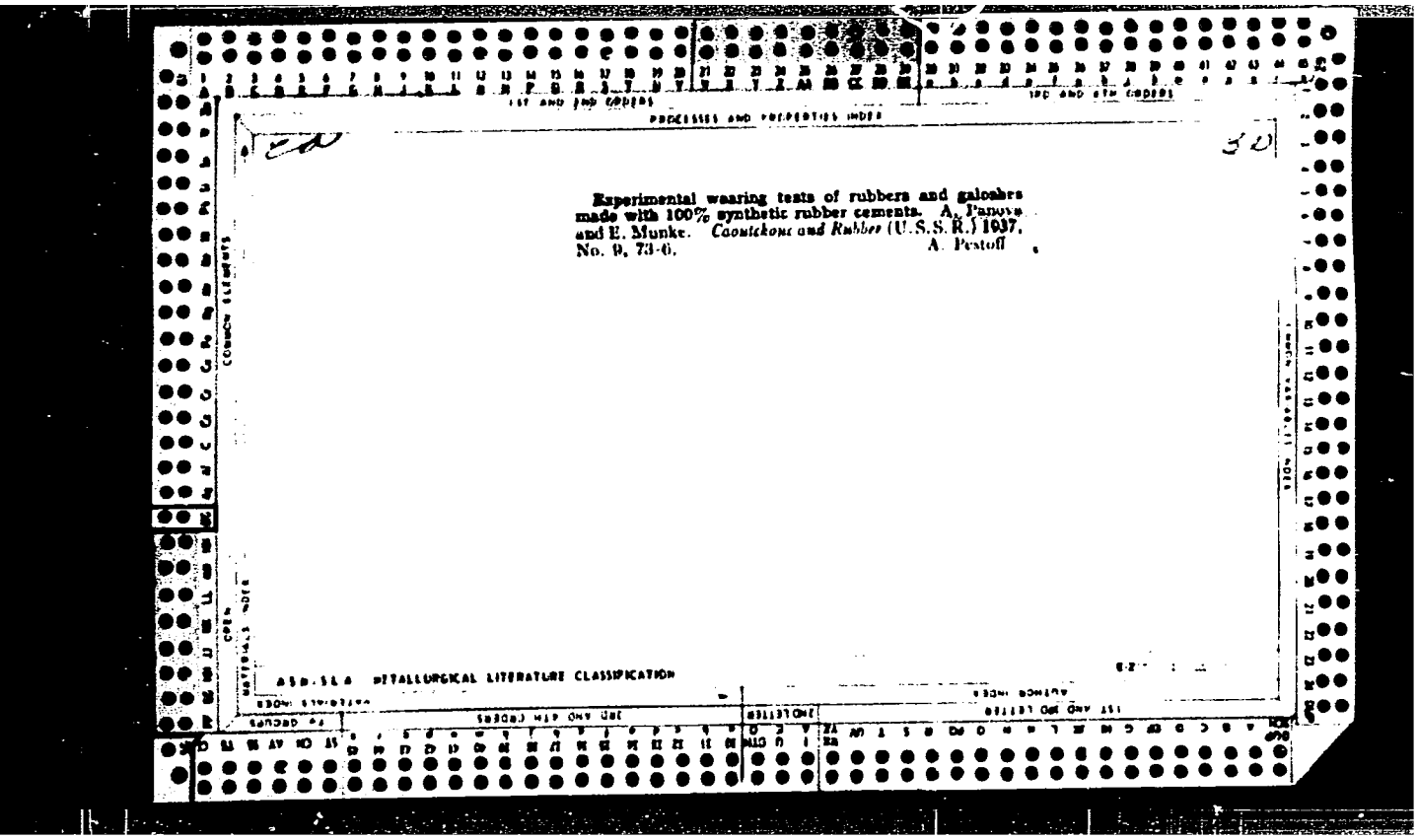
the chamber. A d-c motor mounted on the carriage ensures an adjustable welding rate within 5-100 m/hr. A VN-6 fore-vacuum pump, an N-20T oil-vapor fine-vacuum pump, and a BN-3 oil-vapor booster pump, with a combined output of 10,000 lit/sec, exhaust the chamber down to 10^{-4}-10^{-5} torr. Three electron guns are used with these parameters: accelerating voltage, 10-25 kv; test voltage, 50 kv; beam current, 0-500 ma; specific energy in the focal beam spot with optimum lens distance, 5-10 kw/mm^2. Some details of welding procedures are given. "A. M. Svyat*skiy was the leading designer. Engineers A. A. Mikhaylovskiy, V. I. Khoroshilov, A. L. Loginov, and V. F. Illarionov took part in designing the outfit. V. M. Shiyan was the leading designer of the electron gun." Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona AN UkrSSR (Institute of Electric Welding, AN UkrSSR)

SUBMITTED: 21Dec63 DATE ACQ: 31Mar64 ENCL: 00

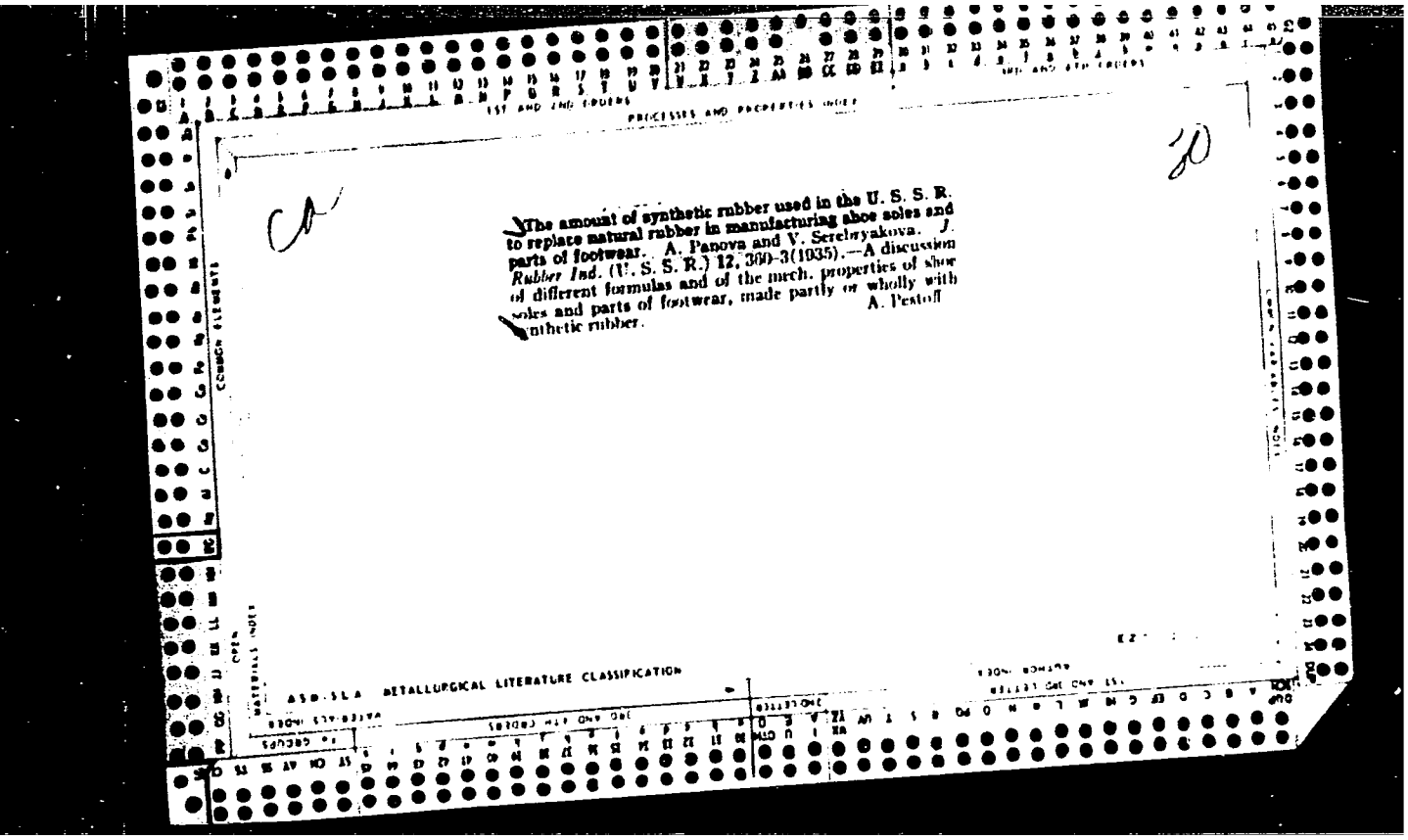
SUB CODE: ML NO REF SOV: 000 OTHER: 000

Card 2/2



Experimental wearing tests of rubbers and galoshes made with 100% synthetic rubber cements. A. Panova and E. Munke. *Caoutchouc and Rubber* (U.S.S.R.) 1937, No. 9, 73-6.

A. Pestoff



The amount of synthetic rubber used in the U. S. S. R. to replace natural rubber in manufacturing shoe soles and parts of footwear. A. Panova and V. Serebryakova. *J. Rubber Ind.* (U. S. S. R.) 12, 360-3(1935).—A discussion of different formulas and of the mech. properties of shoe soles and parts of footwear, made partly or wholly with synthetic rubber. A. Pestoff

PANOVA, A.; MUSAYEVA, R.; BAKHTIAROV, Ye.

"Technology of artificial leather" by S.A.Pavlov and others. Reviewed by A.Panova, R.Musaeva, E.Bakhtiarov. Kozh.-obuv. prom. no.10:34-35 O '59. (MIRA 13:2)
(Leather, Artificial) (Pavlov, S.A.)

KRUTOV, G.A.; APEL'TSIN, F.R., red.; PANOVA, A.I., red.; IVANOVA, A.G., tekhn.red.

[Cobalt deposits] Mestorozhdeniia kobal'ta. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po geologii i okhrane nedr, 1959. 231 p. (MIRA 13:5)

(Cobalt)

PAKHOLKOV, V.D.; PANOVA, A.I., red. izd-va; IVANOVA, A.G., tekhn. red.

[Prospecting statistics] Statistika geologorazvedochnykh rabot. Moskva, Gosgeoltekhizdat, 1962. 278 p. (MIRA 15:11)
(Prospecting—Statistics)

ACCESSION NR: AT4016316 S/0000/62/000/000/0338/0341

AUTHOR: Panova, A. N.; Dobrovinskaya, Ye. R.; Garber, P. R.

TITLE: Scintillation and luminescence properties of NaI(Tl, Cu) and NaI(Cu) crystallophosphors

SOURCE: Vses. soveshch. po fiz. shchelochnogaloidn. kristallov. 2d, Riga, 1961. Trudy*. Fiz. shchelochnogaloidn. kristallov (Physics of alkali halide crystals). Riga, 1962, 338-341

TOPIC TAGS: luminescence, phosphor, crystallophosphor, scintillation, alkali halide, alkali halide crystal, sodium iodide, copper, copper luminescence activator, scintillation counter

ABSTRACT: The effect of Cu-admixtures on the scintillant properties was studied in NaI(Tl) crystals in an effort to perfect nuclear radiation counters in which the crystals are essential. The study included the distribution and assimilation of Cu in the crystals, the dependence of the scintillant effectiveness on the Cu-concentration and the resolution and spectral characteristics of the crystals. The chemical analysis of specimens, grown by a liquid-phase convective mixing process, showed that the admixtures readily

Card 1/2

L 26664-66 EWT(m) JD/JW/JG

ACC NR: AT6010456 SOURCE CODE: UR/3119/65/000/003/0027/0031

AUTHORS: Panova, A. N.; Uglanova, V. V.; Charkina, T. A.

55
52
B+1

ORG: [Charkina] All Union Scientific Research Institute of Single Crystals, Khar'kov (Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov)

TITLE: Optical properties of x-irradiated LiF crystals of different purity

27 27

SOURCE: AN LatSSR. Institut fiziki. Radiatsionnaya fizika, no. 3, 1965. Ionnye kristally (Ionic crystals), 27-31

TOPIC TAGS: lithium fluoride, x ray irradiation, light absorption, crystal impurity, alkali halide, luminescence spectrum, crystal growing, crystal, optic property

ABSTRACT: In view of the lack of unambiguous data concerning the connection between the irradiation dose on the intensity of additional absorption in LiF crystals, the authors investigated the optical properties of LiF crystals of different purity exposed to the same x ray dose, since it is known that the intensity instability of the additional absorption in alkali-halide crystals depends to a considerable degree on

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ACC NR: AT6010456

impurities present. The crystals were grown by the Kyropoulos method in an air atmosphere, and by the Stockbarger method in vacuum. The optical absorption is measured with a vacuum spectrograph and a spectrophotometer, and the luminescence excitation spectra were measured with apparatus consisting of two monochromators and a photomultiplier. An incandescent lamp was used for the excitation. Copper x-radiation was applied for sixty minutes. The irradiation gave rise to F and M bands at 250 and 445 nm respectively, in additional to some secondary effects. The crystals with smaller amounts of impurities had greater stability against irradiation in the region of vacuum ultraviolet and had lower absorption intensity in the F and M bands. The presence of impurities also affected the excitation spectra of the observed luminescence and the time during which the optical absorption of irradiated crystals stored in darkness remained unchanged. It is concluded that the purity of the initial raw material and the method of growing greatly influence the optical properties of x-irradiated crystals. The authors thank L. M. Soyfer and A.I. Chubenko for help with the work. Orig. art. has: 3 figures and 1 table.

SUB CODE: 20/ ORIG REF: 001/ OTH REF: 002 /SUBM. DATE:00

Card 2/2 BL

SOV/76-32-9-35/46

AUTHORS: Lutskiy, A. Ye., Panova, A. N.

TITLE: The Specific Heat of Liquid Nitrobenzene (Teployemkost' zhidkogo nitrobenzola)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 9, pp 2183-2186 (USSR)

ABSTRACT: The specific heat at constant pressure (C_p) of nitrobenzene was measured over the interval 60-140°C. The method of absolute condensation was used (Refs 7,8). The apparatus was assembled with the assistance of I. A. Sidorov. By gaging and using correction formulae it was possible to achieve an accuracy of 0,1%. The results are presented in a table (Table 1) and in a diagram (Fig 1). The direction of the curve is given by the following formula:

$$C_p = 0{,}349 + 0{,}0_4106t + 0{,}0_5382\ t^2.$$

In contrast to earlier data (Ref 3) the curve obtained here has no minimum at 60°C and is not level between 110° and 120°C. The C_p value does not vary linearly with the temperature, but this is no valid indication that molecule complexes are forming.

Card 1/2

The Specific Heat of Liquid Nitrobenzene SOV/76-32-9-35/46

There are 1 figure, 2 tables, and 29 references, 15 of which are Soviet.

ASSOCIATION: Politekhnicheskiy institut im. V. I. Lenina, Khar'kov (Khar'kov Polytechnical Institute imeni V. I. Lenin)

SUBMITTED: April 20, 1957

Card 2/2

5 (4)

AUTHORS: Lutskiy, A. Ye., Panova, A. N. (Khar'kov) SOV/76-33-5-2/33

TITLE: The Hydrogen Bond and Physical Properties of Some Substituted Derivatives of Phenol and Anisole (Vodorodnaya svyaz' i fizicheskiye svoystva nekotorykh zameshchennykh proizvodnykh fenola i anizola). 5. The Heat Capacity of Nitrophenols and Nitroanisoles (5. Teployemkost' nitrofenolov i nitroanizolov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 5, pp 970-975 (USSR)

ABSTRACT: The methods of measuring the heat capacity, the apparatus, the purification of the substances investigated, are described in reference 5. Table 1 shows the values of C_p, depending on temperature, for phenol, anisole, and their o-, m-, and p-nitroderivatives. The temperature dependence in the interval investigated (63°-137°) can be represented by the equations $C_p = a + bt$ or $C_p = a + ct^2$. The values of the coefficients a, b, c are shown in table 1. Table 2 shows the values of C_p and MC_p (M = molecular weight) for the same compounds at 90°, 115°, and 135°. Thus it appears that the position of the

Card 1/4

substituent does not influence C_p in the case of nitroanisoles whereas in the case of nitrophenols, the C_p value for the orthoderivative is lower than that for the two other isomers. This fact can be explained by the formation of an intermolecular hydrogen bond which suppresses the tendency of the orthoderivative of forming molecular complexes. Figures 1-4 show the diagrams of the heat capacity depending on temperature of the compounds investigated. The following equation holds for normal liquids consisting of individual molecules:

$MC_p = \frac{T\alpha^2 v}{\beta} + C_{inn} + C_{tr + rot}$ (α, β - coefficient of expansion, and of isothermal compression, respectively; v - molecular volume; C_{inn} - inner vibration and rotation heat capacity; $C_{tr + rot}$ - translation and rotation heat capacity). In the case of compounds which tend towards complex formations by means of hydrogen bond, heat capacity is increased mainly by

additional heat consumption C_{ass} which is used for destroying the molecular complexes. Thus the difference of the C_p values for the three isomer nitrophenols is:

$$M(C_{p_{m-(p-)}} - C_{p_{(o-)}}) \approx \left[\left(\frac{T\alpha^2 v}{\beta}\right)_{o-} - \left(\frac{T\alpha^2 v}{\beta}\right)_{m-(p-)}\right] + C_{ass}.$$

This dependence is used in the approximate evaluation of C_{ass} of m- and p-nitrophenol. The supersonic velocities in melts of nitrophenols (at 124°) and in nitroanisoles (at 90°) were measured by means of the ultrasonic detector of defects UZD-7N. The values for u (in m/sec) and for $\frac{C_p}{C_v} = 1 + \frac{T\alpha^2 u^2}{J C_p}$ and $M(C_p - C_v) = \frac{T\alpha^2 v}{\beta}$ are shown in table 3 (J = mechanic heat equivalent). The C_{ass} values of m- and p-nitrophenol have the same magnitude as those of aliphatic alcohols. There are 4 figures, 3 tables, and 17 references,

The Hydrogen Bond and Physical Properties of Some Substituted Derivatives of Phenol and Anisole. 5. The Heat Capacity of Nitrophenols and Nitroanisoles SOV/76-33-5-2/33

7 of which are Soviet.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut im. V. I. Lenina (Khar'kov Polytechnic Institute imeni V. I. Lenin)

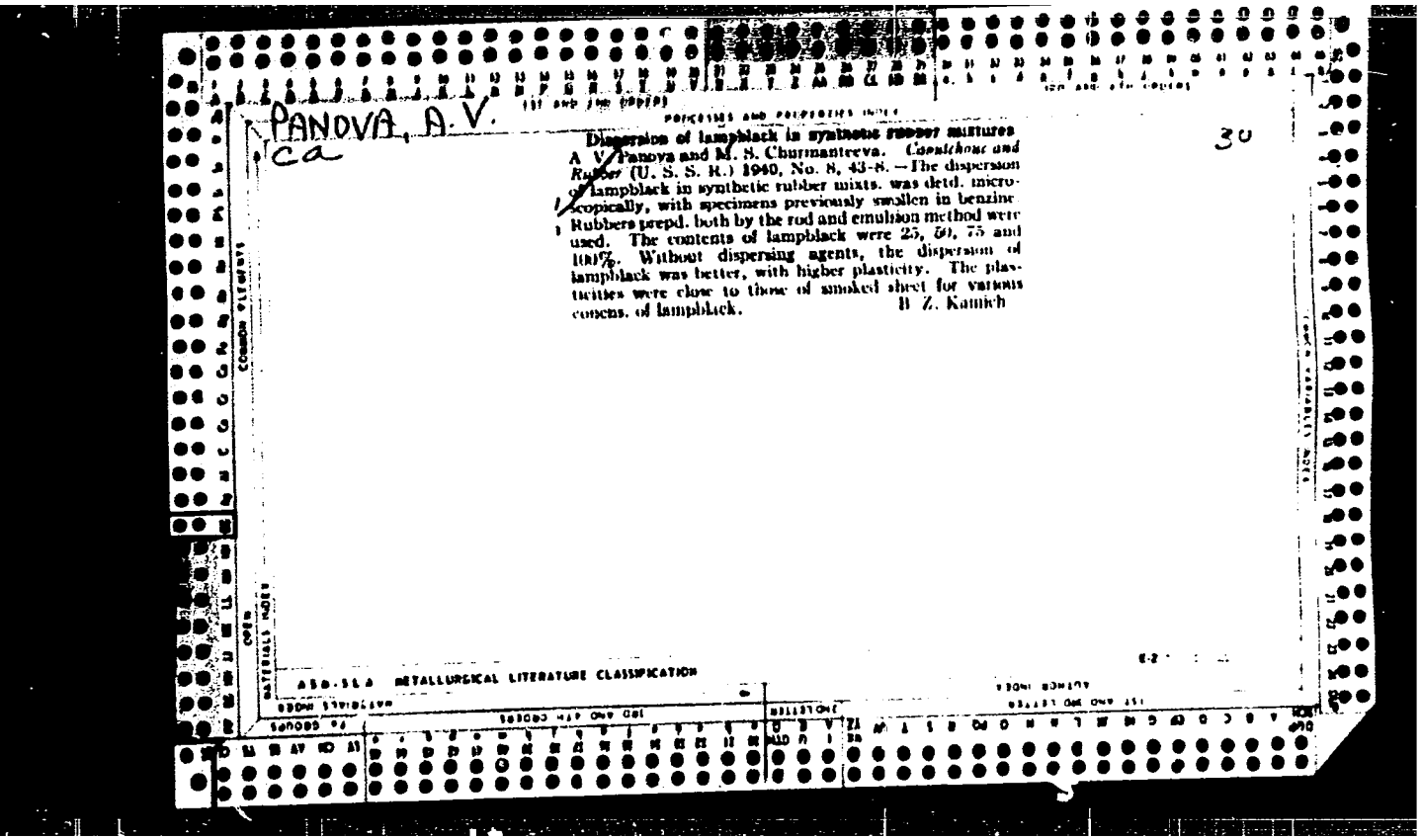
SUBMITTED: April 20, 1957

Card 4/4

LUTSKIY, A.Ye.; PANOVA, A.N.

Hydrogen bonding and the velocity of sound propagation in liquids. Akust. zhur. 6 no.1:126-128 '60. (MIRA 14:5)

1. Khar'kovskiy politekhnicheskiy institut im. V.I.Lenina.
(Hydrogen bonding) (Sound—Speed)



PANOVA, A. V.
Ca

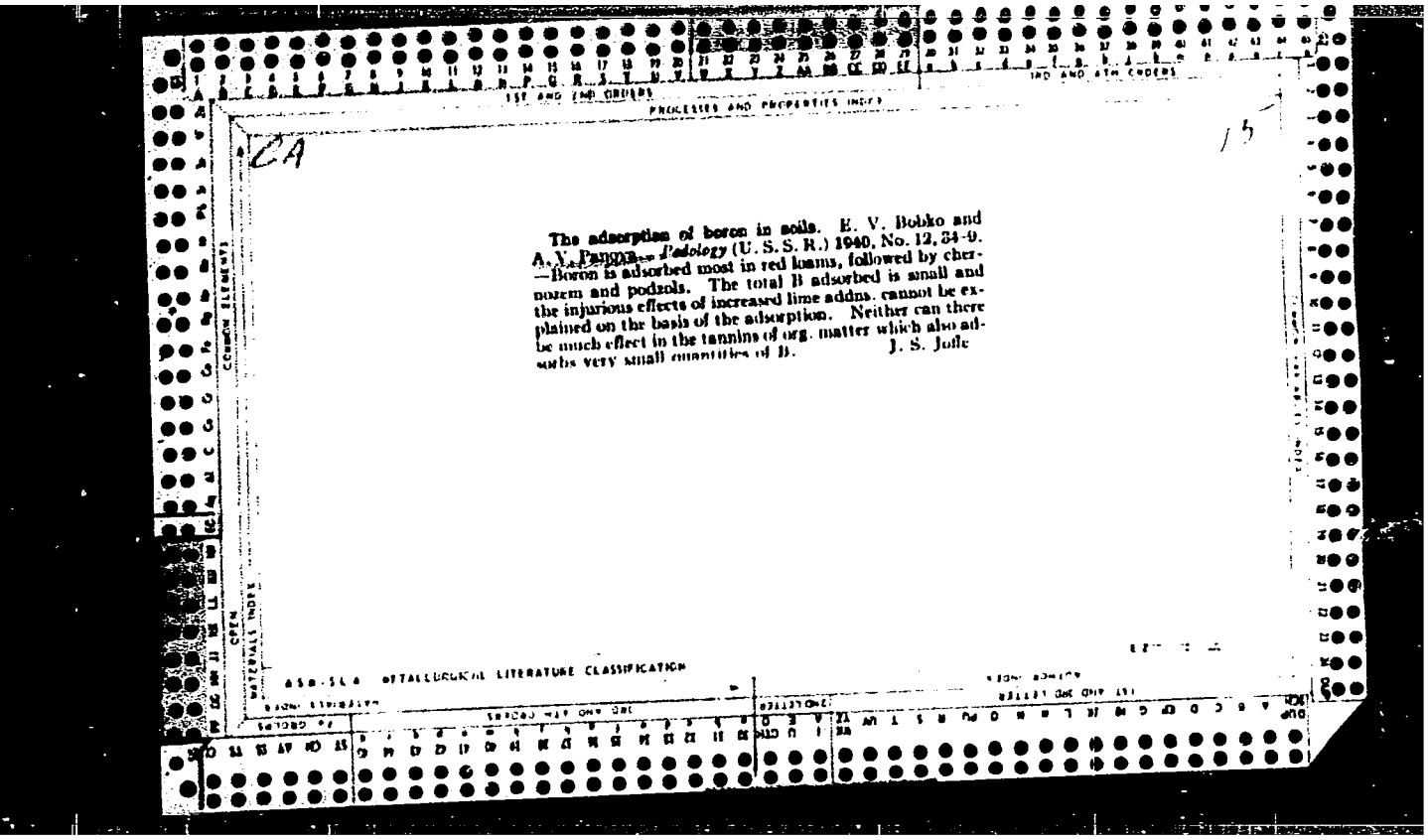
30

Dispersion of lampblack in synthetic rubber mixtures. A. V. Panova and M. S. Churmantseva. *Kauchuk and Rezina* (U. S. S. R.) 1940, No. 8, 43-8.—The dispersion of lampblack in synthetic rubber mixts. was detd. microscopically, with specimens previously swollen in benzine. Rubbers prepd. both by the rod and emulsion method were used. The contents of lampblack were 25, 50, 75 and 100%. Without dispersing agents, the dispersion of lampblack was better, with higher plasticity. The plasticities were close to those of smoked sheet for various concns. of lampblack. B. Z. Kamich

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

PISARENKO, Aleksandr Pavlovich; SAFRAY, Boris Aleksandrovich; PANOVA, A.V., retsenzent; TORMOZOVA, L.I., redaktor; MEDVEDEV, L.Ya., tekhnicheskiy redaktor

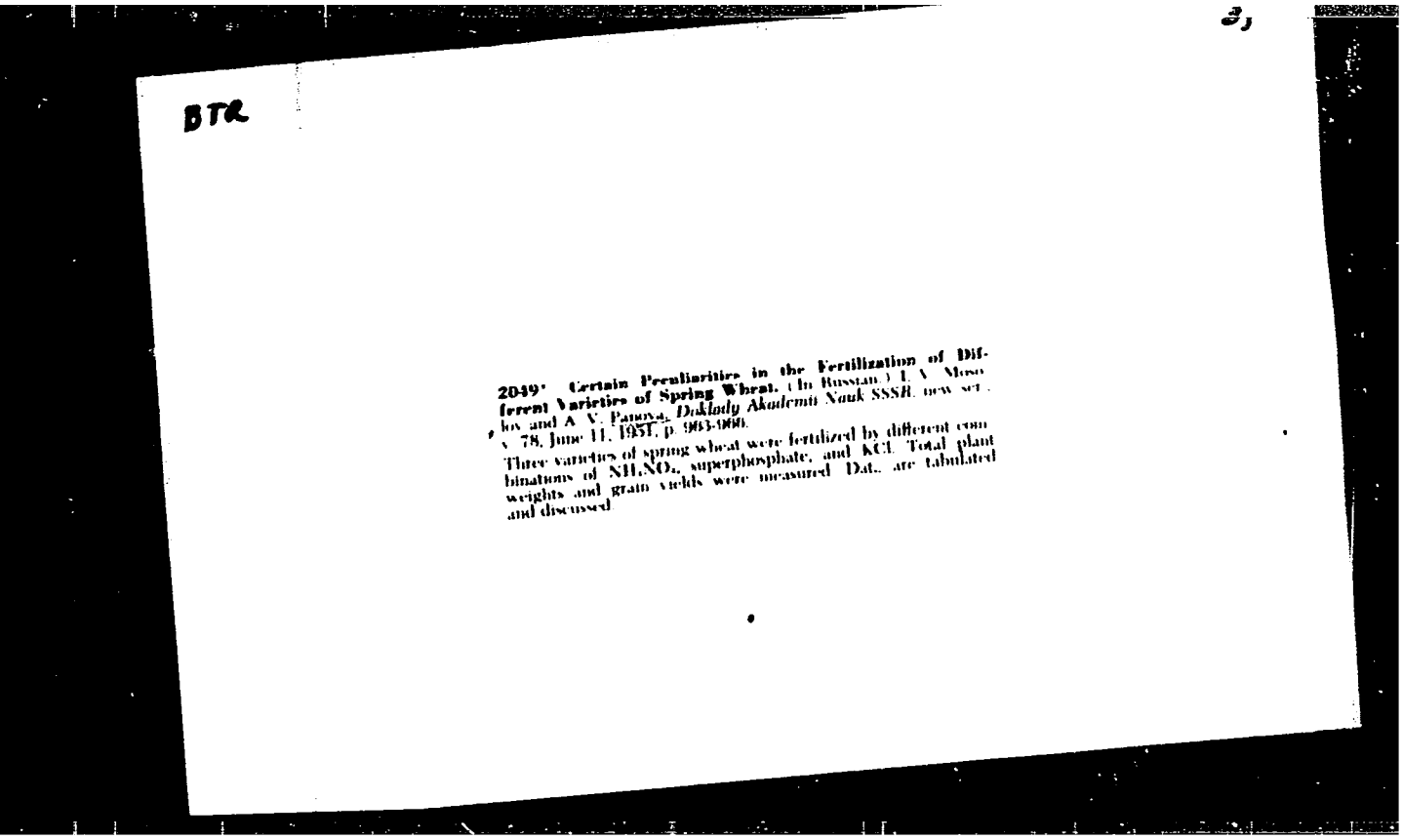
[Technology of the production of footwear rubber parts] Tekhnologiia proizvodstva obuvnykh rezinovykh detalei. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva legkoi promyshl. SSSR, 1956. 182 p. (MLRA 9:10)
(Shoe industry) (Boots and shoes, Rubber)



CA

15

The adsorption of boron in soils. E. V. Bobko and A. V. Pangna. *Pedology* (U. S. S. R.) 1940, No. 12, 34–9.—Boron is adsorbed most in red loams, followed by chernozem and podzols. The total B adsorbed is small and the injurious effects of increased lime addns. cannot be explained on the basis of the adsorption. Neither can there be much effect in the tannins of org. matter which also adsorbs very small quantities of B. J. S. Joffe



BTR

2049. **Certain Peculiarities in the Fertilization of Different Varieties of Spring Wheat.** (In Russian.) I. V. Mosolov and A. V. Panova. *Doklady Akademii Nauk SSSR*, new ser., v. 78, June 11, 1951, p. 983-986.

Three varieties of spring wheat were fertilized by different combinations of NH_4NO_3, superphosphate, and KCl. Total plant weights and grain yields were measured. Data are tabulated and discussed.

1. MOSOLOV, E.U.; PANOVA, A.V.

2. USSR (600)

4. Wheat

7. Several particularities of the nutrition of spring.wheat. Sel.i sem. 19 no.10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

1. MOSLOV, I. V.; TSOY, A. N.; PANOVA, A. V.

2. USSR (600)

4. Wheat

7. Effect of fertili,ers on the yield of spring wheat sown after perennial grasses, Sov. agron., 11, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

1. MOSOLOV, I. V.; PANOVA, A. V.

2. USSR (600)

4. Wheat

7. Effect of stem leaves of wheat on the yield and protein content of grain in relation to variety, Dokl. AN SSSR, 88, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

PANOVA, A. V.

USSR/Agriculture - Plant physiology

Card 1/1 Pub. 22 - 44/48

Authors : Mosolov, I. V.; Lapshina, A. N.; and Panova, A. V.

Title : Migration of radioactive Ca^{45} calcium in plants during its introduction outside of the root.

Periodical : Dok. AN SSSR 98/3, 495-496, Sep 21, 1954

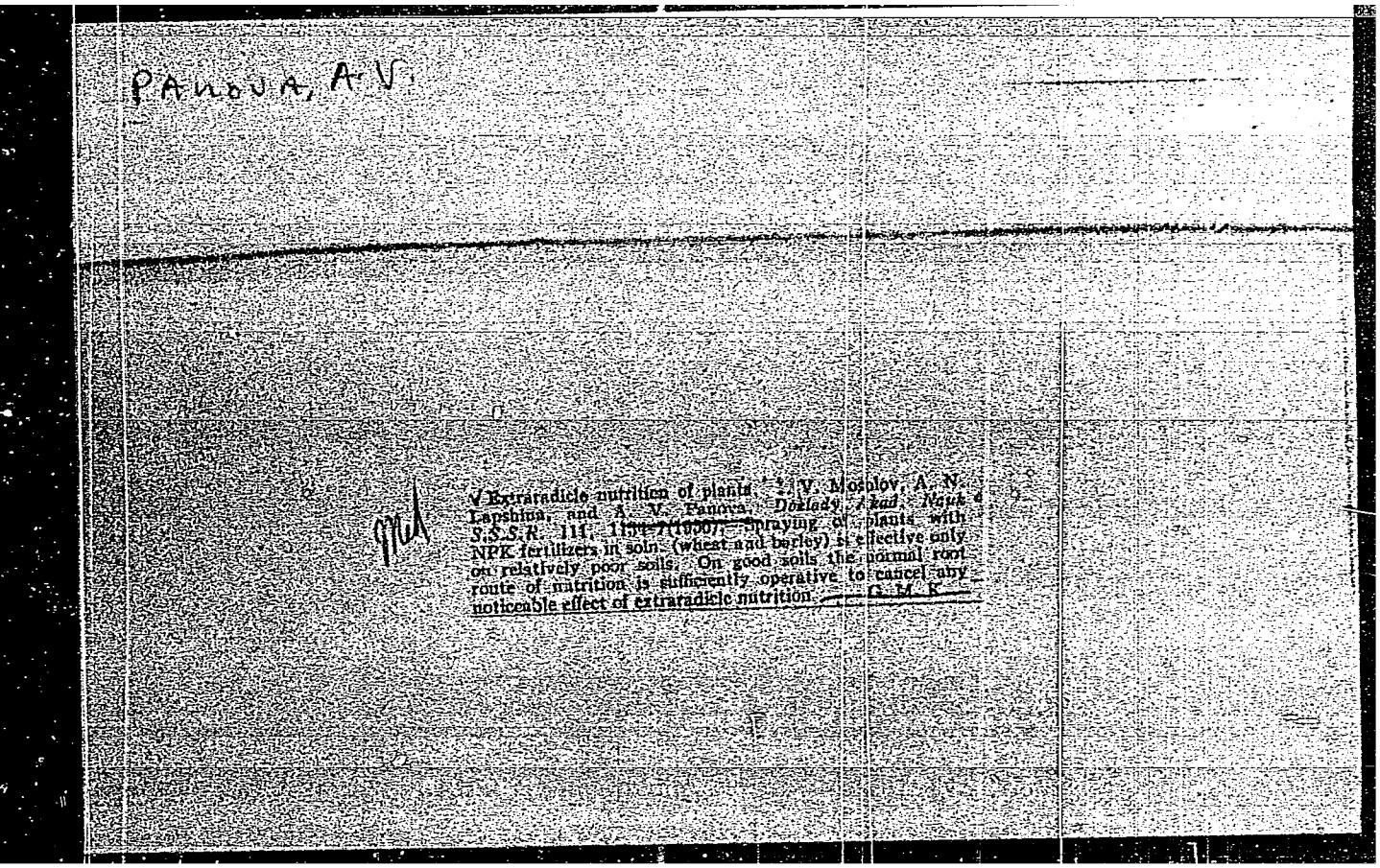
Abstract : The problem of whether radioactive Ca^{45} introduced into the leaf and not the root of a plant migrates into other parts of the plant was investigated and the results are described. Table.

Institute : All-Union Institute of Fertilizers, Agro-Technique and Agricultural Soil Science.

Presented by: Academician A. L. Kursanov, June 15, 1954

PANOVA, A. V.

AG ✓ The entry of tagged phosphorus into plants in relation to the depth of placement in the soil. I. V. Mosolov and A. V. Panova. *Pochvovedenie* 1955, No. 7, 92-3.—Oats grown under conditions of varying methods of placing phosphates (surface application, plowing under, with manure alone, with lime alone, and with manure and lime) show that plowing under brings about a more energetic entry of tagged P into the plants in the later stages of growth. Whichever method of placement was used the plants at flowering contained the same amt. of tagged P. J. S. Joffe



PANOVA, A.V.

√ Extraradicle nutrition of plants. I. V. Moslov, A. N. Lapshina, and A. V. Panova. *Doklady Akad. Nauk S.S.S.R.* 111, 1174-7(1956).—Spraying of plants with NPK fertilizers in soln. (wheat and barley) is effective only on relatively poor soils. On good soils the normal root route of nutrition is sufficiently operative to cancel any noticeable effect of extraradicle nutrition. — G. M. K.

KIPNIS, B.Ya.; KOLESNIKOV, V.N.; LERNER, D.V.; MINAYEV, S.M.; PANOVA, A.V.; LIFSHITS, I.D., kand. tekhn. nauk, retsenzent; MIKHAYLOV, V.A., inzh., red.; PLEMYANNIKOV, M.N., red.; BATYREVA, G.G., tekhn. red.

[Handbook on the manufacture of artificial leather] Spravochnik po proizvodstvu iskusstvennoi kozhi. Moskva, Gizlegprom. Vol.1. 1963. 523 p. (MIRA 16:12)
(Leather, Artificial)

mer; Some activity was noted in the case of corn plants.

Card 1/3

SOV/20-121-2-49/53

AUTHORS: Mosolov, I. V., Panova, A. V.

TITLE: On the Role Played by Primary and Secondary Roots in the Nutrition of Zea Mays (K voprosu o roli pervichnykh i vtorichnykh korney v pitanii kukuruzy)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 2, pp. 378-381 (USSR)

ABSTRACT: The problem of the importance of the roots mentioned is dealt with in many publications; opinions are rather contradictory (Refs 1-6). The number of primary roots is more or less constant, as is known, whereas that of secondary roots differs greatly. The latter are found close to the surface of the earth For this reason their development is to a great extent influenced by the moistening conditions of the upper layer of the soil. Often the development of the secondary roots stops when the soil around them becomes dry. Then they remain underdeveloped. Then also the main role in the nutrition is played by the primary roots. The development of the root systems does not take the same course in different soil and climatic zones. On favorable humidity and nutritional conditions the main role will be played by the secondary root system, in the case of

relatively dry weather it will be the primary root system. The best crops, however, were obtained in the case of a simultaneous good development of either root system. Not only the supply of the plants with water and mineral substances but also with many complicated metabolic products from the roots is of importance. In a favorable surrounding the secondary roots quickly regrow and are covered with fine hair-roots and they transform into well functioning roots. However, the role played by the absorption of mineral salts from the soil by secondary roots as compared to primary roots remains unclear. The authors investigated this problem by means of radioactive phosphorus From the data in table 1 may be seen that the cutting out of one of the two systems from the nutrient substrata leads to a great reduction of the phosphorus supply into the plant. The growth is hampered by that fact. From table 1 may also be seen that the primary and secondary roots have an almost equal absorption power for phosphorus from the nutrient solution. During efflorescence the secondary roots absorbed more phosphorus than the primary roots, as the latter loose to a great extent their absorption power at that time. There are 2 figures, 2 tables, and 13 references, 12 of which are Soviet

SOV/20-121-2-49/55

On the Role Played by Primary and Secondary Roots in the Nutrition of Zea Mays

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut udobreniy i agropochvovedeniya (All Union Scientific Research Institute of Fertilizers and Agropedology)

PRESENTED: April 1, 1958, by A. L. Kursanov, Member, Academy of Sciences, USSR

SUBMITTED: February 21, 1958

Card 3/3

PANOVA, A. V.

USSR/Cultivable Plants - Grains. M-2

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10739

Author : Mosolov, I.V., Panova, A.V.

Inst : VIUA

Title : The Role of Primary and Secondary Roots.

Orig Pub : Kukuruza, 1957, No 7, 27-29.

Abstract : Experiments with the application of P^{32} in water cultures in the VIUA have determined that plants develop best when both the primary and secondary root systems are preserved. When only one root system was left, a reduction in P^{32} activity in the plant ash /zola/ was noted, and also reduction in the percentage of P_2O_5 in the corn leaves and stalks. When deprived of their fine hairs the secondary roots absorbed several times less P^{32}. During the blossoming period the secondary roots absorbed three times as

Card 1/2

Card 2/2

GLAVANAKOVA, V.; PANOVA, B.

Observations on occupational accidents in the Stalin Chemical Plant. Suvrem. med., Sofia 7 no.4:30-36 1956.

1. Iz Medikosanitarnata Chast--Khimkombinat Stalin. Gl. lekar: D. Angelova.
(ACCIDENTS, INDUSTRIAL, statistics, in chem. indust. in Bulgaria (Bul))

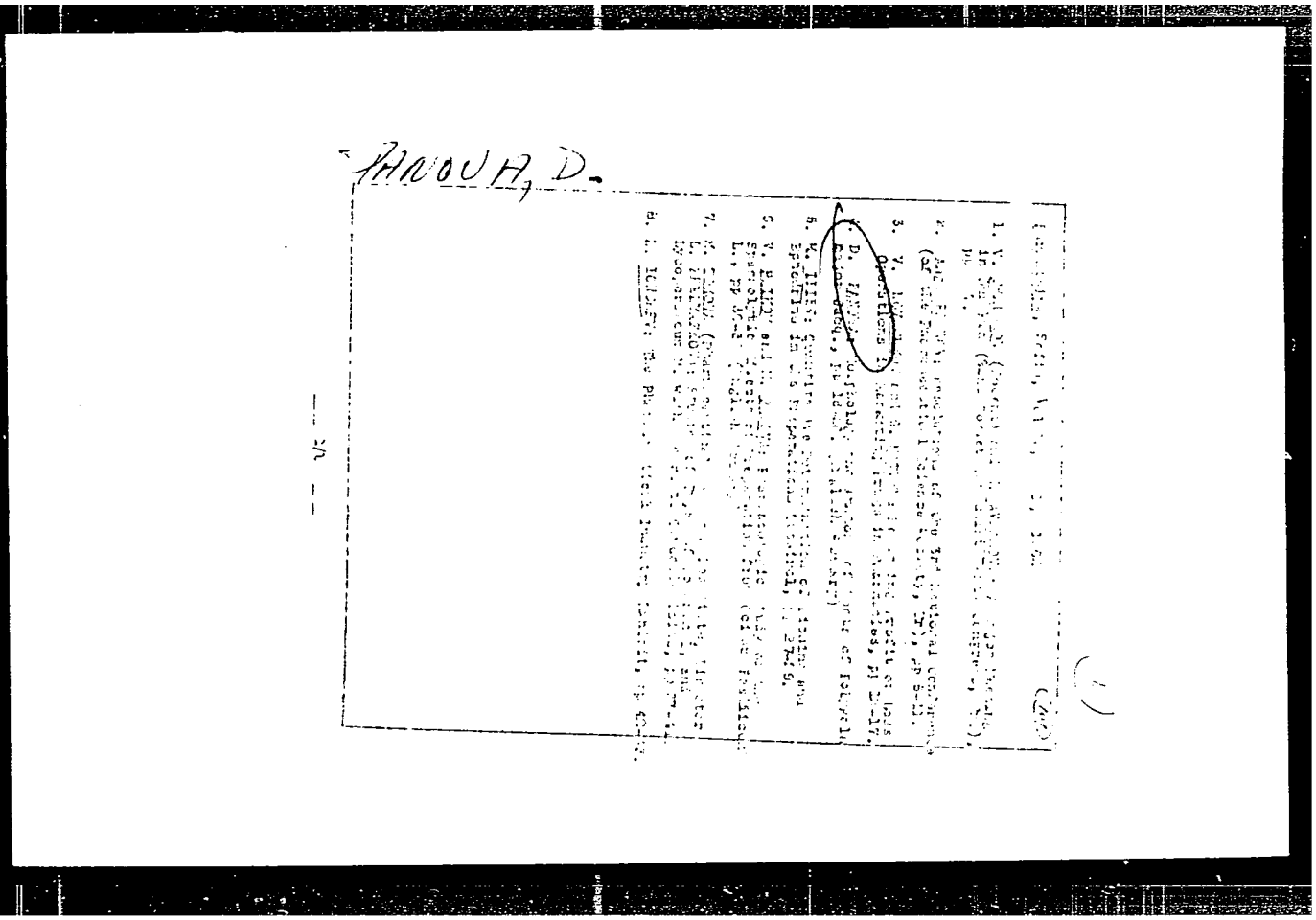
COUNTRY : BULGARIA
CATEGORY : Organic Chemistry. Natural Substances and Their Synthetic Analogs
ABS. JOUR. : RZKhim., No. 1 1960, No. 1356

AUTHOR : Panova, D.
INST. :
TITLE : Chemistry and Pro[illegible] of Saponins

ORIG. PUB. : Farmatsiya (Sofiya), 1959, 9, No 1, 24-30

ABSTRACT : Brief notes on saponins are given (definition, chemical classification, separation, analysis, physiological activity). Bibl. 17 titl. [illegible]

CARD: 1/1



PANOVA, D.

BULGARIA

BOYCHINOV, A.; YANKULOV, I.; PANOVA, D.

Sofia, Farmatsiya, No. 1, Jan-Feb 1963, pp 1-8

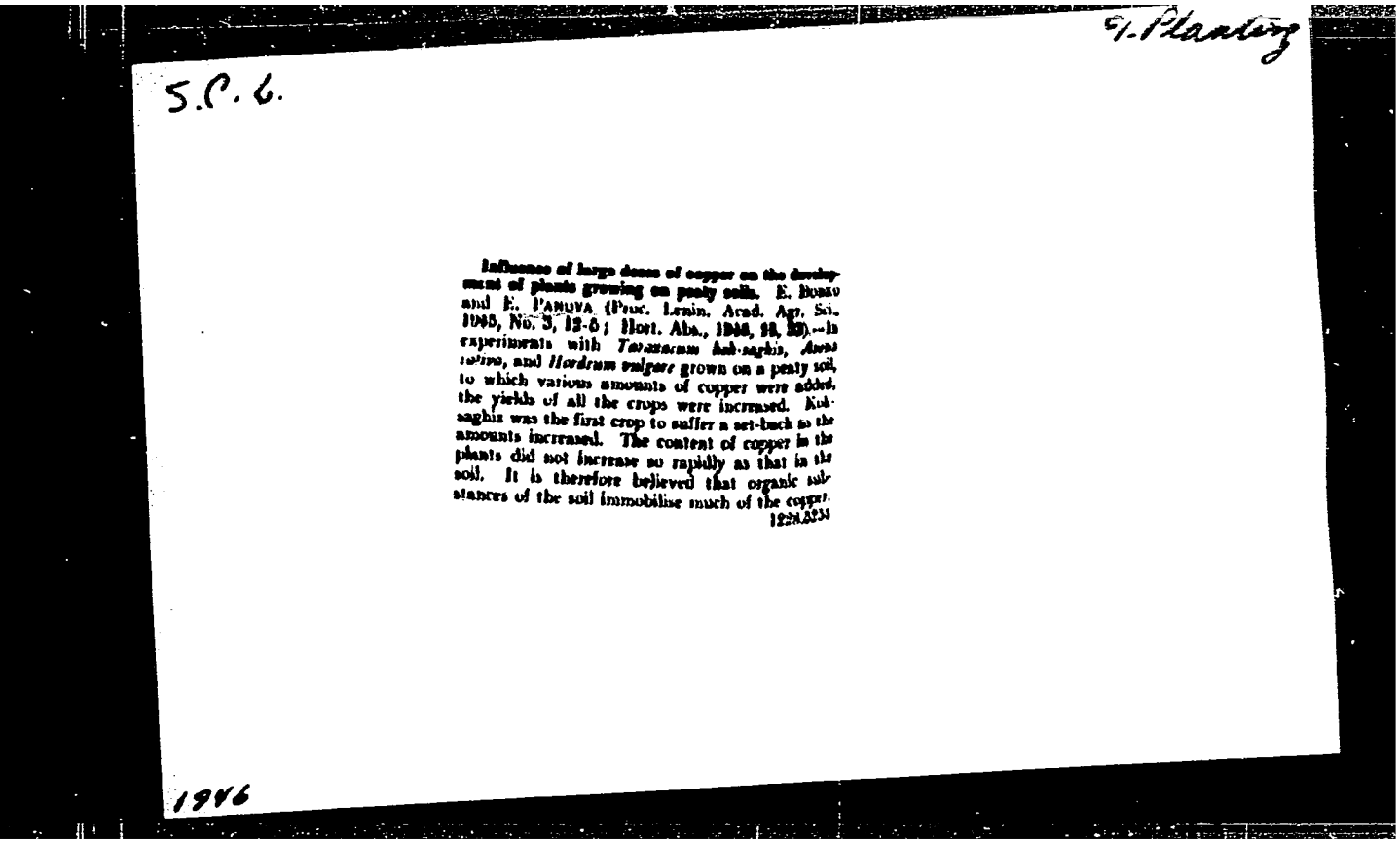
"Examination of the Development of the Saponine Plants Gypsophila Paniculata L., G. Trichotoma Wned., G. Altissima L. and Chenopodium Bonus Henricus L. in Connection with the Dynamics of Collecting Saponines in Their Roots."

(3)

PANOVA, D. Yu.

"High speed computing devices", (Bistrodeystvuuschie vichislitelnie mashini), publishing by the State Publishing House for Foreign Literature, MOSCOW 1952.

SO: D-69420, 28 July 1954,



S.C. 6.

Q. Planting

Influence of large doses of copper on the development of plants growing on peaty soils. E. Bosco and E. Panova (Proc. Lenin. Acad. Agr. Sci. 1945, No. 3, 12-5; Hort. Abs., 1946, 16, 30).—In experiments with *Taraxacum kok-saghis*, *Avena sativa*, and *Hordeum vulgare* grown on a peaty soil, to which various amounts of copper were added, the yields of all the crops were increased. Kok-saghis was the first crop to suffer a set-back as the amounts increased. The content of copper in the plants did not increase so rapidly as that in the soil. It is therefore believed that organic substances of the soil immobilise much of the copper.
1228.2[3]

1946

PANOVA, E

USSR/Physiology of Plants. Growth and Development. I-5

Abs Jour: Ref. Zhur-Biol., No 1, 1958, 1184.

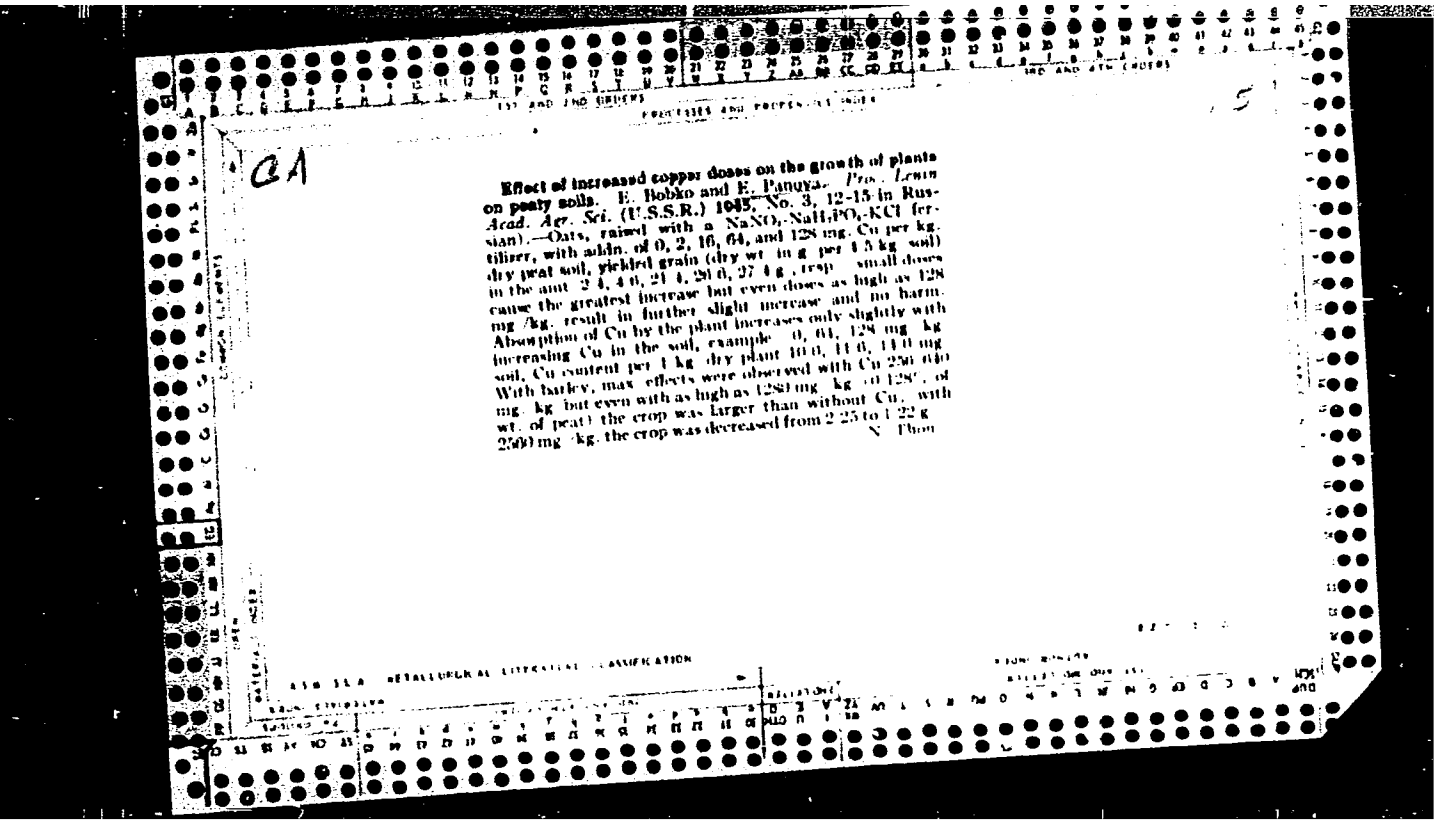
Author : Panova, E.
Inst : Stavropol' Agricultural Institute
Title : The Effect of Artificial Lengthening of the Autumn Day Upon the Growth of Hybrid Wheat, Rye, Barley, and Wheat-Couch Grass Leaves.

Orig Pub: Sb. nauchno-issled. rabot stud. Stavropol'sk. s.-kh. in-t, 1956, No 4, 168-170.

Abstract: No abstract.

Card : 1/1

-4-



CA

Effect of increased copper doses on the growth of plants on peaty soils. E. Bobko and E. Panova. *Pro. Lenin Acad. Agr. Sci.* (U.S.S.R.) 1945, No. 3, 12-15 (in Russian).—Oats, raised with a $NaNO_3$-NaH_2PO_4-KCl fertilizer, with addn. of 0, 2, 16, 64, and 128 mg. Cu per kg. dry peat soil, yielded grain (dry wt. in g. per 4.5 kg. soil) in the amt. 2.4, 4.0, 21.4, 28.0, 27.4 g., resp. small doses cause the greatest increase but even doses as high as 128 mg./kg. result in further slight increase and no harm. Absorption of Cu by the plant increases only slightly with increasing Cu in the soil, example: 0, 64, 128 mg. kg. soil, Cu content per 1 kg. dry plant 10.0, 11.0, 14.0 mg. With barley, max. effects were observed with Cu 250 mg./kg. but even with as high as 1280 mg./kg. of 128°, of wt. of peat) the crop was larger than without Cu, with 2500 mg./kg. the crop was decreased from 2.25 to 1.22 g.

N. Thon

ACCESSION NR: AP5011896

AUTHOR: Sivkov, A. A.; Panova, E. G.

12
21
B

TITLE: A tunable opticoacoustical resonator

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1965, 190-192

25

TOPIC TAGS: acoustical resonator, opticoacoustical resonator, IR acoustical resonator, acoustical analyzer, acoustical frequency analyzer, gas analyzer, acoustical gas analyzer

ABSTRACT: An opticoacoustical resonator with acoustically tunable cavities for amplifying the signal is described. The cylindrical chamber consists of two cavities separated by a thick wall perpendicular to the axis. The wall has an axial cylindrical neck connecting both cavities. Both ends of the chamber have threaded caps which can be moved axially to change the volume of each cavity. The input end cap has a window which is transparent to infrared radiation and a disk of coated mica which is heated by IR radiation pulsating with a certain frequency. A dynamic microphone is attached to the inside of the output cavity cap. The pulse frequency of the IR can be adjusted to the best response frequency of the microphone (700 cps described). Resonance conditions of the system can be established by length and diameter of the

In the case described), [illegible] by proper selection of the length and [illegible] screwing the caps in or out, by proper selection of the length and

Card 1/2

L 44150-65

ACCESSION NR: AP5011896

axial connecting neck, or by filling the chamber with an appropriate gas. In the case described, a resonance of 700 cps was established by adjusting the volumes of the cavities (10.88 cm^3 for the input and 5.0 cm^3 for the output cavity) at a ratio of the connecting hole cross section to its length equal to 0.162 cm. The resonance curve obtained had a rather sharp peak signal which dropped by half when the volume of the input cavity was changed by 2 cm^3, or that of the output cavity by 1 cm^3. Generally speaking, the signal from the tuned chamber exceeded that of an untuned

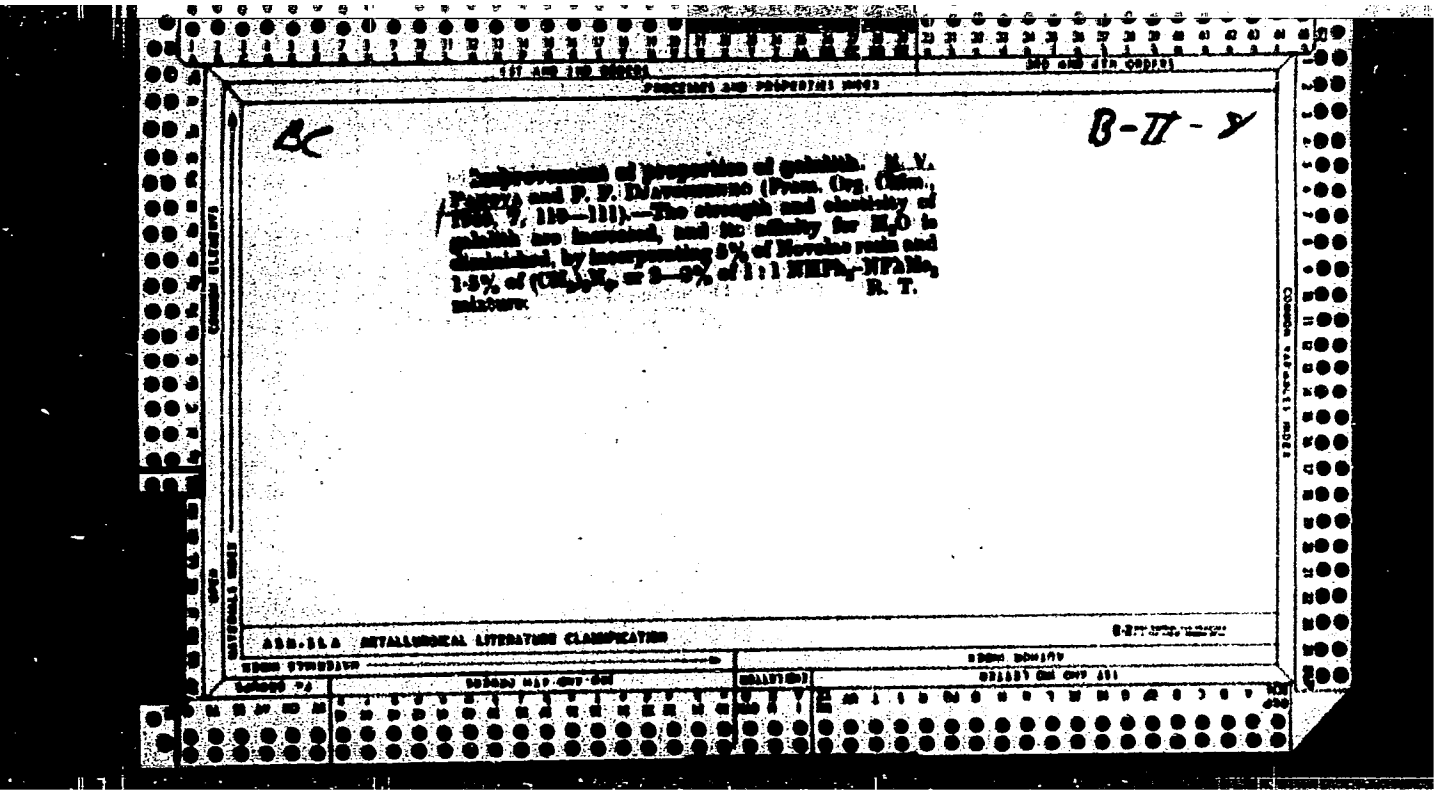
corresponds to a time constant of 0.005 sec. Orig. art. has: 2 figures.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: 04Mar64 ENCL: 00 SUB CODE: EC

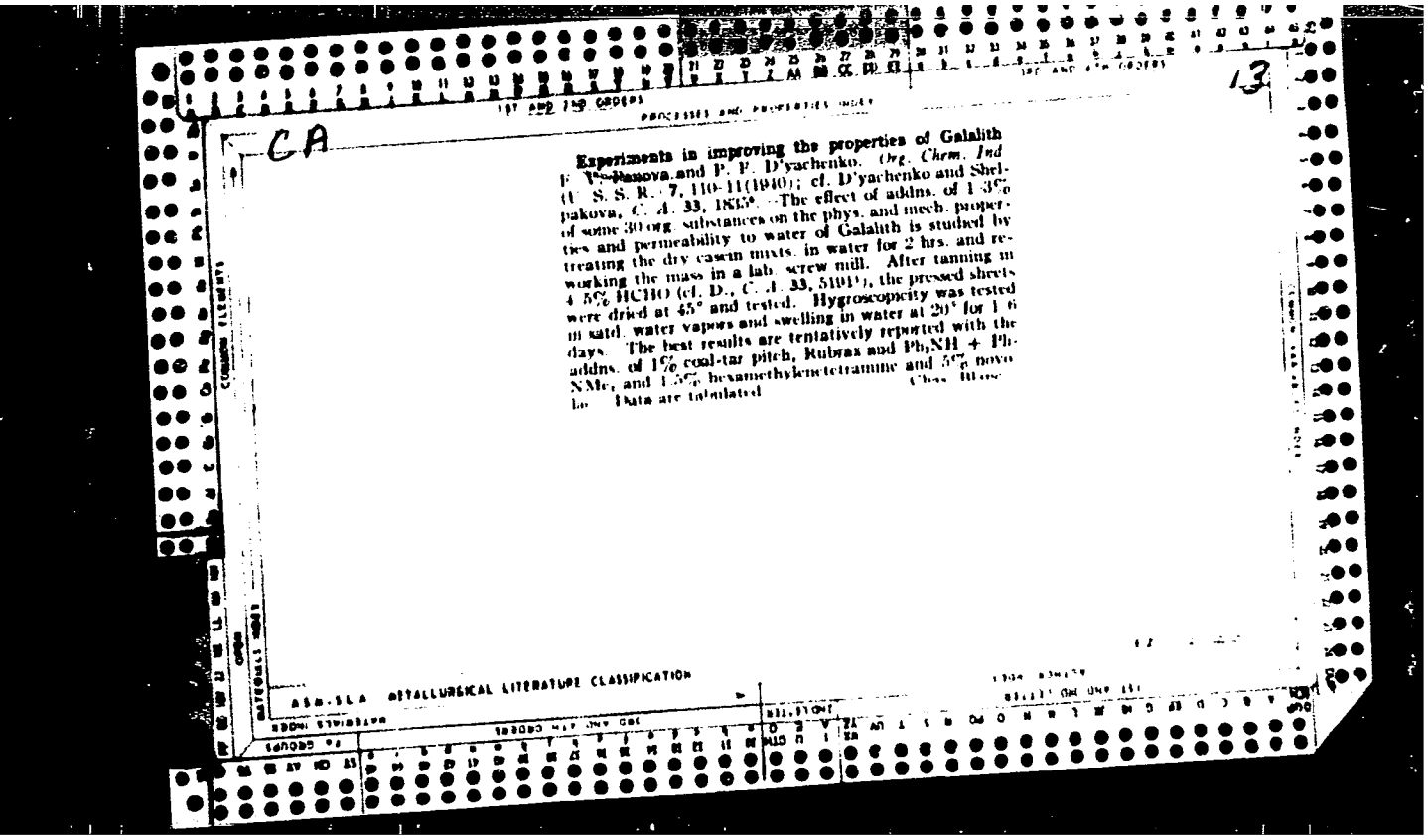
NO REF SOV: 006 OTHER: 002 ATD PRESS: 3248

Card 2/2



B-II-y

AS&TA METALLURGICAL LITERATURE CLASSIFICATION



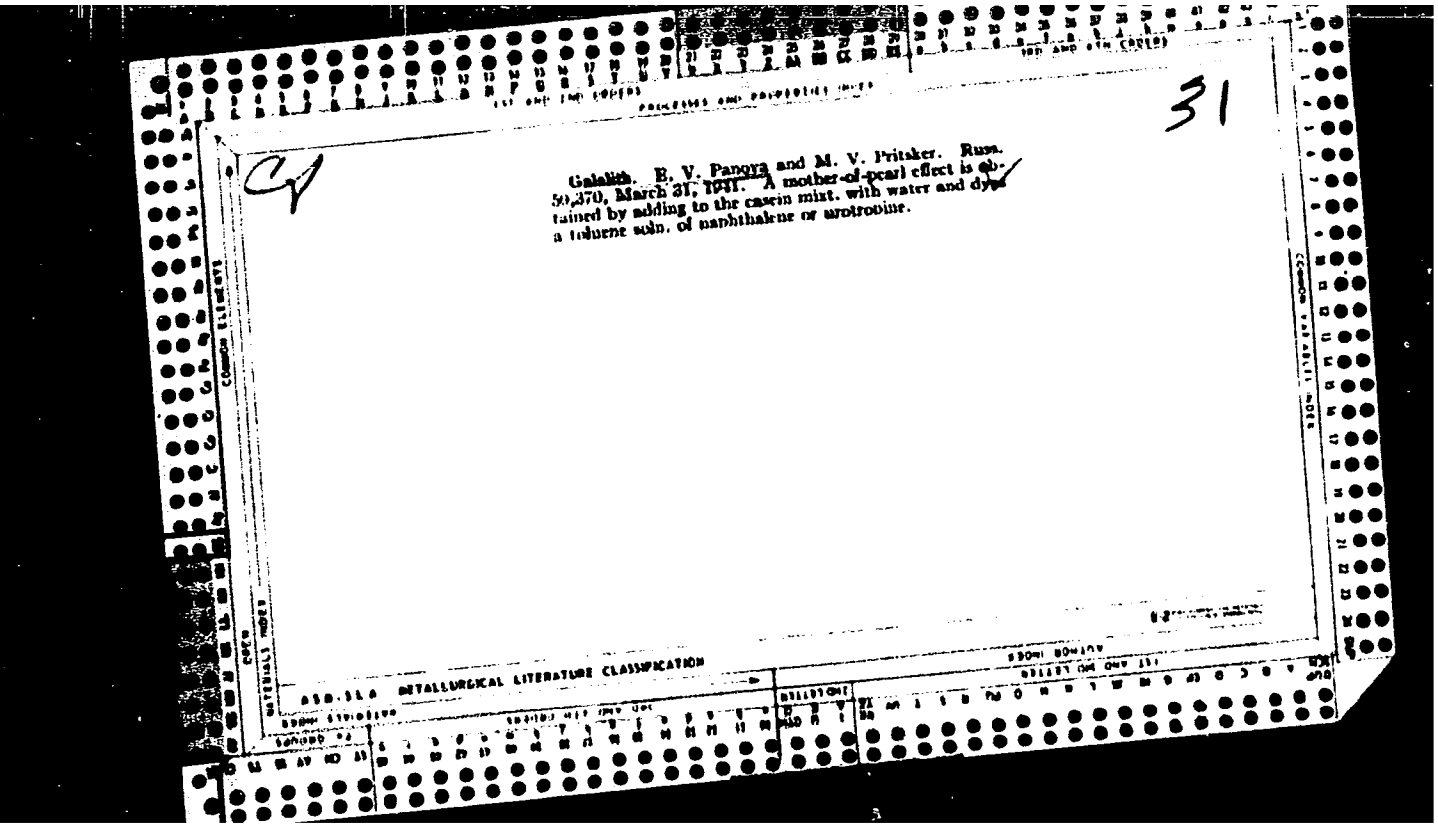
CA

13

Experiments in improving the properties of Galalith. P. V. Ivanova and P. P. D'yachenko. *Org. Chem. Ind.* (U. S. S. R.) 7, 110-11(1940); cf. D'yachenko and Shelpakova, C. A. 33, 1855⁹. The effect of addns. of 1.3% of some 30 org. substances on the phys. and mech. properties and permeability to water of Galalith is studied by treating the dry casein masts. in water for 2 hrs. and working the mass in a lab. screw mill. After tanning in 4.5% HCHO (cf. D., C. A. 33, 5101⁴), the pressed sheets were dried at 45° and tested. Hygroscopicity was tested in satd. water vapors and swelling in water at 20° for 1-6 days. The best results are tentatively reported with the addns. of 1% coal-tar pitch, Rubras and Ph_2NH + PhNMe, and 1.5% hexamethylenetetramine and 5% novo... Data are tabulated.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



31

Galalith. B. V. Pangya and M. V. Pritsker. Russ. 59,370, March 31, 1941. A mother-of-pearl effect is obtained by adding to the casein mixt. with water and dye a toluene soln. of naphthalene or urotropine.

METALLURGICAL LITERATURE CLASSIFICATION

BELOVA, O.I.; VARENTSOVA, K.I.; PANOVA, G.A.

Preparation of suppositories, ointments and liniments using a tissue grinder. Apt. delo 13 no.2:67-70 Mr-Ap '64. (MIRA 17:12)

1. TSentral'nyy aptechnyy nauchno-issledovatel'skiy institut, Moskva.

PANOVA, G. D.

"Investigating the Halogen Derivatives of Organic Compounds on Mercury Cathodes." Cand Chem Sci, Gor'kiy U, Gor'kiy, 1954. (RZhKhim, No 22, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55